

OUR EDUCATION

JOURNAL OF EDUCATIONAL IDEAS AND RESEARCH

VOLUME : 7



Editor

Pranab Kumar Chakrabarti



2005

**DEPARTMENT OF EDUCATION
CALCUTTA UNIVERSITY**

CUB-H05468-3 - 0145967

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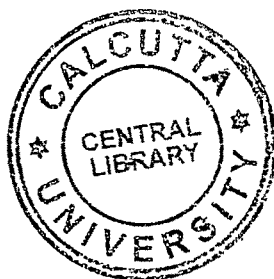
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Editorial Note

Once again after a prolonged hibernation the seventh volume of OUR EDUCATION is going to see the day light with the eternal optimism that it will no longer be in slumber for such a long period. No excuse is enough to explain the long absence of the journal from appearing in the gallery of academic periodicals as the University consistently allocated funds, though insufficient, in the budgetary provision every year, the University Press never declined to take up the printing job and there was never any dearth of research in the Department of Education. We unconditionally apologise to our academic fraternity for intermittent break in the publication of Our Education since its first appearance in the late 1980s.

However, with the publication of earlier volumes of Our Education, the overly expressed expectation that the journal would serve as a forum of communication among the teachers and scholars of our region was not fulfilled due to lukewarm response from those for whom the journal is meant. Perhaps this is one of the factors that dampened the spirit and enthusiasm of publishing the journal regularly. We now hand over this issue of the journal to the teachers, students and research scholars with the renewed hope that Our Education will be widely circulated and richly contributed by the teachers and scholars of Education.

Since the sixth volume of Our Education was published, the Department of Education has undergone a sea change. It is now spacious enough to accommodate all its needs. It has almost all modern gadgets needed by a Department of Education. It has secured affiliation of the NCTE and we are proud to be a part of a 5 star University accredited by the NAAC. But still we have a far way to go. As while implementing the new B.Ed. syllabus and conducting atleast 8 workshops with the teacher educators, personally I badly felt the need for extensive research in the field of teacher education. I invite research papers in this field to provide feedback for deciding about the future directions of teacher education developing innovative and effective teaching strategies for the future generation.

In fact management of futuristic education suitable for our socio-economic conditions is at doldrums because all attentions are directed to a few limited number

of the fields of study. By that we cannot claim to be futuristic in educational ideas, rather we are more present oriented, at best myopic futuristic. As students of education we should be able to explore other true futuristic issues of education. Why can't the educationists shed the cocoon and float their butterfly wings in the open air in search of new flowers? I invite you all to contribute to Our Education with originality and flexibility with wild imagination but your feet firmly on the ground reality.

In the present volume six papers on different areas of interest have been printed. Five of these are research papers based on field based empirical data. The crown of all the papers is an article on Management Education contributed by one of the most eminent and illustrious scholars in the field of management education. We are fortunate and grateful to the author Dr. Subir Choudhury who had kindly visited our Department to deliver the Jnanedramohon Sen Memorial lecture in November last year. The text of the lecture has been published in an abridged form to save space. We sincerely hope that future issues of Our Education will be richer with many more research papers of excellent merit.

Pranab Kumar Chakrabarti
Editor

Management Education in India : Past, Present and Future*

Subir Choudhury**

Historical Perspective

Management Education deals with the art and science of directing and controlling or handling any organisation, specially under resource constraint situations, be it business, industry, public systems or government. Such education not only covers a thorough understanding of Behavioural Sciences, Human Resource Development, Financing, Marketing, Operations and Information Systems, but also calls for adequate grasp of the National and Global Economics, Politics, Sociology, Legal Framework, Technological Trends and Natural Environment in which the organisation has to function and prosper through the formulation of effective Strategies. Such a complex, multi-disciplinary and action-oriented education is best imparted to mature students at Postgraduate level and hence the importance and market value of post-graduate level teaching and training programmes in management.

Management Education emerged as a discipline in the past 100 years or so. In 1881, Wharton School of Finance and Commerce came into existence at the University of Pennsylvania, USA. This was followed by Universities of Chicago and California in 1898. Thereafter, the growth was rapid i.e. 40 Business Schools by 1915 and 118 by 1925. In 1992-93, USA produced 2,50,000 graduates, 89,000 postgraduates and 1,300 doctorates in Management. These numbers are 21.4% of all graduates, 24% of all postgraduates and 3% of doctorates awarded by the US Universities in 1992-93.

To start with, US business schools focused on descriptive industry studies, but by the 1920s, attention was focused on functional areas like accounting and retailing. The Ford Foundation and the Carnegie Corporation sponsored two reviews in 1959 that strongly advocated upgrading the academic standards of business faculty, encouraging academic research and focusing on postgraduate rather than undergraduate programmes. The US Business Schools responded promptly shifting from vocational orientation to managerial and even a scientific focus (e.g. 'Operational Research' and 'Market Research').

The two opposing concepts of management education may be referred to as the *academic* model and the *professional* model. The academic model, characterized by the MBA programme at the University of Chicago, views management as science. It

* Jnanendramohan Sen Memorial Lecture, 2000 delivered in the Department of Education on November 24, 2004. An abridged version.

** Dr. Subir Choudhury is internationally acclaimed as management expert and educator and was the Director of Indian Institute of Management, Joka, Kolkata. At present he is at the apex of many national and international bodies of management.

is based upon the positivist notion that, as in the physical sciences, principles may be discovered that describes optimal resource allocation in the firm. In contrast, the professional model embodied in the Harvard Business School programmes, view management as a craft whose practice requires a balance of judgement, knowledge and skill.

Adherents to the professional model are less concerned with optimization than with the solution of the real world management problems. They note that sophisticated mathematical models may not correspond to messy, real world situations and that their use may be inappropriate, resulting in a "type three error", the correct solution to the wrong problem (Teece and Winter², 1984).

The research agenda methodology tends to be centred around problems rather than driven by disciplines. One might ask, for example, how the resource allocation process actually occurs within the complex, diversified firm and what are the implications for managers at the divisional and corporate levels. Such problems, when studied through case observation, are usually found to be multi-disciplinary.

Teaching methodologies reflect underlying beliefs about the role of knowledge and skills in management education. Methodologies used in business schools based upon the academic model are appropriate for the transmission of knowledge and theory is most efficiently conveyed by the lecture method. In business schools based upon the professional model, teaching methodologies are participative on the premise that "wisdom cannot be told" but must be learned through a process of discovery.

In contrast to the rapid growth of management education in USA, the emphasis on the subject was insignificant in the rest of World during the first half of the century. Europe woke up to the need for professionalisation of enterprise management after facing North American Challenge in the 50's resulting in the start of business schools in many European countries. It is interesting to note that Manchester and London Business Schools commenced operation after that of Indian Institutes of Management in Calcutta and Ahmedabad in the years 1961 and 1962 respectively.

Till recently, Japan did not believe in formal management education in business schools. They firmly believed in in-company training of executives and that management should be born out of long experience. It is only in the past two decades, under the influence of increasing competitive pressures and greater multinationalisation of business, that Japan has seen a rapid growth in local business education programmes and greater use of MBA programmes in USA.

From the above review of the evolution of management education, it is clear that both university level programmes and post-experience executive or in-company programmes have important role to play in developing managers for business organisations. In India management education is a post-independence phenomenon started in the fifties, but gaining momentum only in the nineties following Economic Liberalisation.

2. Teece, David and Winter, Sidney. "The Limits of Neoclassical Theory in Management Education." *American Economic Review*, Vol. 74, No. 2, May, 1984.

Growth of Management Education in India

The Earliest start

Indian Institute of Social Welfare and Business Management, Calcutta is the first management institute set up in this country in 1953 by the visionary Chief Minister of West Bengal, Dr. Bidhan Chandra Roy. The Institute initially offered Diploma in Social Welfare (Labour Welfare) to be followed by part-time Postgraduate Diploma in Business Management from 1954, awarded by Calcutta University. Currently, it is the most diversified management institute in the country with 2,400 postgraduate students in Business Management, Human Resource Management, Public Systems Management etc. Dr. B.C. Roy continued as its Founder Chairman and Prof. D.K. Sanyal its Founder Director till their death in 1962 and 1970 respectively.

Formation of All India Board of Technical Studies in Management

In 1952, the All India Council of Technical Education formed an Expert Committee to examine the possibility of starting management courses in universities and other educational institutions. The Committee recommended the commencement of Post graduate diploma courses in Industrial Administration and Business Management mostly on a part-time basis for sponsored junior executives, and establishment of a National Institute of Management, as a joint and co-operative enterprise of Government, Industry, Commerce and the general public.

In pursuance of these recommendations the All India Board of Technical Education in Management was set up in 1953 with membership fully representative of all interests concerned. With this step important developments followed in Management Education in India.

The Board suggested that there should be three distinct types of courses. Business Management, Industrial Administration & General Management. It was in favour of flexibility, adaptability and experimentation subject to the overall limitation for the faculty available to organize and conduct the courses. The Board also selected the institutions to conduct the courses. The Delhi School of Economics of Delhi University, Mumbai University, the Indian Institute of Social Welfare and Business Management, Calcutta University and Madras University were selected as centers for courses in Business Management. The Indian Institute of Technology, Kharagpur, the Indian Institute of Science, Bangalore and the Victoria Jubilee Technical Institute, Mumbai were named for the course in Industrial Administration. However, the Board subsequently felt that a flexible inter-disciplinary approach was necessary and therefore, permitted the institutions to conduct both Business and Industrial Management courses. Gradually, the Board also accepted Management, as a total concept applicable to all dimensions of national life, though, within the framework of the courses there could be functionally oriented specializations and emphasis. Following the formation of All India Board of Technical Studies in Management in 1953 and the guidelines provided by it, Indian Institute of Social Welfare and Business Management commenced its

Postgraduate Diploma in Management in 1954. This was quickly followed by four universities namely, Andhra, Mumbai, Delhi & Madras.

Based upon the recommendations of AICTE, the Administrative Staff College of India, Hyderabad was established in 1956 as a joint & co-operative enterprise of Government of India and Private Industries & Commerce. It is an autonomous non profit institution. The main objective of the institute is to develop professionalism in management.

The Operational Research Society of India was founded in 1957 to provide a forum for the limited number of Operational Research Scientists working in the country at that time on modeling for management decisions and also to provide an avenue to widen their horizon by exchange of knowledge and application of techniques from outside the country.

In 1973, after considering the available educational facilities in Operational Research in this country at Universities, Institutes of Technology and the Institutes of Management, the Society discerned a gap which at that time could be filled by students going overseas. The Society, therefore, initiated an examination system in Operational Research, supplemented by an optional coaching programme, now called the graduate Programme Examinations. This examination system is recognised by the Government of India, Ministry of Education and is of Postgraduate level, comparable to the Master's Programme in Universities abroad.

All India Management Association

In 1957, the All India Management Association (AIMA) was created as an apex body with the active support of the Government of India. AIMA was intended as a body to pool in management thoughts in the country; a forum to develop a national managerial ethos; an organisation to facilitate the furtherance of the profession and its contribution to society. Today, nearly four decades later, AIMA is recognised for its national stature upheld by a broad base of 56 Local Management Associations and over 12,000 professionals as individual members and over 350 corporate organisations as institutional members. AIMA is represented on a number of committees of the Government of India, the Indian Institutes of Management and professional bodies, besides being an active member of the Asian Association of Management Organisations (AAMO), which is the regional body of the World Management Council (CIOS).

Indian Institute of Industrial Engineering

The Indian Institute of Industrial Engineering (IIIE) was founded in 1957 by some eminent Industrial Engineers, Executives and Consultants interested in the scientific management of Industries. The IIIE is non-profit organisation and a registered society for propagating the profession of Industrial Engineering (IE) in India. It is dedicated to the advancement of Industrial Engineering Education and Practice and to the application of such knowledge to assist in the management of all endeavours. Industrial Engineering is essentially a multi-disciplinary function and encompasses various areas of science, technology, economics, engineering and operations management for

achieving higher overall productivity. Industrial Engineering has a vital role in exploiting the existing technology and also in the increasing awareness in the application of the true potential of Industrial Engineering techniques in improving the productivity of operations in various sectors of the economy as well as in improving the effectiveness of administration. The main function of the Institute is to create an awareness among the practicing Industrial Engineers of the ever changing technology and methods of management through seminars, conventions, journals etc. and to disseminate information and knowledge pertaining to Industrial Engineering for increasing the productivity of individuals and organisations. The Government of India has recognised the Graduate (IE) qualification since 1974 as being equivalent to a bachelor's degree in Industrial Engineering from an accredited University. Over 6,500 students appear for the IIE Graduate Examination every year as external students.

National Productivity Council

The National Productivity Council was established in 1958 by the then Ministry of Industries Development based on a recommendation by the ILO. The Council has a number of Regional Directorates and Local Councils.

The programmes of the National Productivity Council are directed towards techno-managerial development in those critical areas that are responsible for productivity at the enterprise level. Initially the programmes were aimed at obtaining the maximum possible participation of various enterprises and were, therefore, mostly addressed to mixed groups representing different industries in different geographical regions. Recently, in depth programmes are being organised at the enterprise level for improving their operational efficiency.

Indian Institutes of Management

The sub-committee of the Board of Management Studies on the formation of National Institute of Management prepared in 1957 a comprehensive plan setting out details regarding the objective and structure of such Institute as also its links with other professional institutions. Dr. V.K.R.V. Rao, during a visit to USA in 1956, discussed the question of establishing link between India & United States in the field of Management Studies, primarily for securing technical assistance from United States. Subsequently, an Indian Management Studies Team visited the United States between March & May 1959 and submitted its report. Towards the end of 1959 the Planning Commission invited Prof. George W. Robbins, Associate Dean, Graduate School of Business Administration, University of California and Consultant of the Ford Foundation to formulate a scheme for establishment of an All India Institute of Management Studies. Robbins visited various Institutes conducting courses in management studies in the country to note the state of development and submitted a scheme for setting up of an All India Institute of Management. The salient features of Robbins' scheme are given below :

- a) The Institute should be established on an All India basis with financial support from both Industries and Government.

- b) **Location** : This is to be decided after taking into consideration various features namely, (1) Availability of varied type and size of business to serve as laboratory for assurance of adequate resources; (2) Presence of an environment favourable to vigorous growth and experiments.
- c) **Organisation** : The Institute should be set up as an autonomous society under the Societies Registration Act. There should be a governing body representing Government, business and education.
- d) **Course of Studies** : The institute should offer.
 - i) **Master's Degree Course** : It should be a regular 2 years full-time course and award Master's degree. It should be open to young graduates of Arts, Science or Engineering having aptitude for training.
 - ii) **Short-term Courses and Seminars** : Special courses and seminars should be organised for practicing managers at the middle and top levels.
 - iii) **Research Degree or Doctorate** : The Institute should build up resources to award Doctorate Degree to candidates demonstrating outstanding scholarships and ability to carry on research and teaching at a high level in business or in institutions.
- e) **Intake** : The intake for Master's course should be initially 60 to be raised to 150 ultimately.
- f) **Sharing of Costs** : The cost under various heads should be shared by State Government and Local Industries, Central Government and Ford Foundation.

Robbins scheme was accepted by the Planning Commission in principle. It was further examined by the Ministry of Scientific Research and Cultural Affairs. Discussions were also held between Dr. Humayun Kabir, the then Minister of Scientific Research and Cultural Affairs and Dr. D. Ensminger, Resident Representative of the Ford Foundation in India. It was felt that a vast country like India needs more than one National Institute of Management Studies. It was, therefore, decided to establish two IIMs, one at Calcutta and the other at Ahmedabad. The Indian Institute of Management, Calcutta was the first National Institute set up in 1961 with Dr. B.C. Roy as the Chairman and Mr. K.T. Chandy as the Director. This was followed by the establishment of Indian Institute of Management, Ahmedabad in June 1962 in collaboration with the Harvard Business School, USA. The decision to set up IIMs was indeed the most important event in the development of Management Education at the highest level. The IIMs were set up as autonomous institutions under the central government's executive authority. Each IIM was registered as a society in its local areas as collaborative enterprise of the central government, the concerned state government and organisations in business and industry. The management of each IIM was vested in board of governors drawn from nominees of central and state government, representatives of business, industry and professional bodies. The Central Government undertook responsibility to provide financial support to the institutes as grant-in-aid institutions but left them with plenty of scope and responsibility for generating resources through donations, fee and professional charges. Accordingly, the Institutes were obliged to follow government

norms and guidelines in financial and administrative matters. The decision to keep IIMs out of the conventional university system largely facilitated freedom in all academic matters as well as the flexibility in responding to changes in the environment.

On the success of the two National Institutes at Calcutta and Ahmedabad and based on the report on the proposal for two more Institutes of Management prepared by Prof. Ravi K. Mathai of IIM Ahmedabad, the third Institute, the Indian Institute of Management, Bangalore, was established in 1972. Following Nanda Committee's recommendations, a fourth IIM commenced functioning at Lucknow from 1984. Subsequently two more Indian Institutes of Management have been set up at Calicut and Indore in 1996. While Indian Institute of Management, Calicut has commenced its Postgraduate programme with a group of 60 students in 1997, IIM, Indore started its Postgraduate programme in 1998 with 60 students.

The first four IIMs represent a potent force for professionalising management education in India. Upto 1997, they have collectively produced nearly 1,800 postgraduates whose annual earning capacity of around Rs. 400 crores indicates the kind of contributions they are making to Indian economy. A significant number have become chief executives of enterprises, some have become entrepreneurs and a larger number occupy senior managerial positions in Indian private and public sector enterprises. The IIMs have also produced nearly 250 Fellows (Ph. Ds) in management, a number exceeding the collective faculty strength of the four IIMs, signifying a considerable capacity for adding to the teaching, training and research capability of the nation in the field of management. Equally significant have been the achievements of the IIMs in the fields of research and training. Collectively, more than 2,500 cases of Indian management situations have been written and about 5,000 papers and 1,200 books and monographs have been published. These represent vast strides in the indigenisation of professional management know-how and in undertaking pioneering socially relevant work in the Indian context. This indigenised know-how has been applied in training over 50,000 Indian managers and administrators in short, medium and long term management development programmes. From this training enterprise, benefits have accrued not only to the corporate private sector but also increasingly to the corporate public sector, governmental administration and institutions and NGOs operating in host of priority sectors.

The IIMs are National Institutes that have given a distinctive character to management education movement in India and have spearheaded the rapid advancement of management schools in the country. Consequently, over the years, management education has become intimately involved with all sectoral economic activities, such as Agriculture, Business, Transport, Tourism, PSUs, Energy and so on; it has become involved with the administrative system of Government and Defence; with social and service systems such as Education, Research, Population Control, Health, Environment, Urban & Rural Development etc. Management scientists have worked on a variety of sub-sectors and their problems and have reframed the role and scope of management Science from the narrow concepts of Business Management to the broader concept of applying to resolution of problems in nationally significant activities. In this sense

the character of management education that has evolved in India is not a foreign transplant, nor is it merely a foreign adaptation, but represents the creation of Indian talent dedicated to working on the multifarious problems of their country. As such management education has contributed a fresh purpose to the general educational system in India.

The broad concept of Management pointed out, is reflected in the curriculum of each IIM. Eighteen compulsory subjects are taught in the 1st year of the two year programme. Between 1st and 2nd year, the students have to go through a rigorous summer project. In the 2nd year, however, the students have to qualify in sixteen courses of which only $\frac{3}{4}$ integrative subjects like Strategic Management are compulsory. For the balance 12/13 courses, each institute offers between 50 to 80 optional covering wide areas of specialization. The optional courses range from International Business and Total Quality Management to "India Ethos in Management and Environment Management. Thus, the Postgraduate Diploma in Management (PGDM) awarded by the IIMs are truly general management in nature.

The admission process at the IIMs, commences with the Common Admission Test (CAT) held in December every year. Currently around 1,30,000 graduates compete for around 1,300 seats in the six IIMs. Those qualifying in the written Aptitude Test have to participate in Group Discussions and Interview conducted separately by each IIM. Though prior experience is not essential, about 40% of the students qualifying for admission have between one and eight years of experience. After spending two years in sprawling residential campuses of over 100 acres each, providing a total learning environment with excellent library and computer facilities, the students are ready to take up managerial responsibilities in India and abroad. Many of the alumni of IIMA and IIMC from the initial batches are now leaders of top ranking organisations in India and abroad. There is a recent trend of multi-national organisations from USA, Singapore etc. flocking to the IIMs for campus recruitment. All graduating students get a job of their choice within a week from the commencement of campus selection.

The collaborative spirit, freedom and flexibility underlying the formation of IIMs, helped them to grow steadily as leading institutes in management education and development. These Institutes received excellent financial support, not only from the Government of India, but also from the Ford Foundation and Private Business Sector. The shared concern for excellence resulted in an initial 5 year collaboration of IIM, Ahmedabad with the Harvard Business School and IIM, Calcutta with Massachusetts Institute of Technology.

Management Education in the Universities

University Schools started with the commencement of Management Education at the universities of Calcutta, Andhra, Chennai, Mumbai and Delhi in the years 1954/55. India, now, has near about 150 university departments and more than 400 university affiliated institutes offering Master degree in Business Administration or Management on a two years full-time and three years part-time basis. These institutions together produced about 25,000 graduates from full-time and more than 5,000 post graduates.

Many of the university department of management studies have grown out of commerce education. Being considered as one of the many departments of the university, their faculty strength being limited they have to depend heavily on visiting faculty drawn from business and industry. Such part-time faculty is available only in big cities like Delhi, Mumbai, Calcutta, Chennai, Hyderabad, Pune, Ahmedabad etc. As a result, most of the reputed university department/affiliated institutions are located in these cities. Because of the support from visiting faculty, the core faculty of the above institutions can contribute to research, consulting and executive training programmes. The schools located in smaller places, however, experience perpetual difficulties in finding faculty to teach all prescribed courses.

Autonomous Management Institutions

With the excellent track records of the first two IIMs and with gradual liberalization of management education, a large number of independent management institutes have come up with private funding, with or without the help from the Government. Currently there are nearly 116 institutes with a combined intake of 7,500 full-time and 2,000 part-time students. These institutes are authorised to award Master level Postgraduate Diplomas like that of the IIMs.

There are very few distinguished institutes among these independent institutes. Xavier Labour Relations Institute, Jamshedpur and IMT, Ghaziabad deserves special mention. XLRI, Jamshedpur was set up by Father Quinn Enright of Jesuit Society in 1949 to train the labour and union leaders of the companies in Jamshedpur. The institute became an autonomous body in 1958 and was registered as a Society in 1969. It offers Postgraduate Programmes in Business Management and also in Personnel Management and Industrial Relations. It also offers Fellow Programme in Management (FPM), equivalent to Ph. D. XLRI covers about fifteen hundred managers each year through its Management Development Programmes and In-company Training Programmes. It carries out about 65 Consultancy Projects each year. The graduating students from this Institute get excellent placement through campus selection.

IMT was set up in 1980 as a centre for multi-dimensional activities such as management education, training, consultancy and development. It was established by Dr. K. N. Public Trust by its registered society, the Lajpat Rai Education Society. IMT offers Postgraduate Diplomas in Business Management (Full-Time, Part-Time and through Distance Learning) and Computer Application. Its Postgraduate Management Programme has the recognition of Association of Indian Universities (AIU). In less than two decades of its existence, IMT has earned a high status. It would now be offering Fellow Programme in Management (FPM) equivalent to Ph. D. and Executive MBA. The Graduates of IMT get excellent jobs through campus recruitment.

Management Development Institute, Gurgaon and S.P. Jain Institute of Management and Research, Mumbai are other distinguished institutions.

Some of the other leading institutions in this category are : Xavier Institute of Management, Bhubaneswar, School of Communication and Management Studies, Cochin, International Management Institute, Delhi, Fore School of Management, Delhi,

Jagan Institute of Management Studies, Delhi, Graduate School of Business Administration, Ghaziabad, Goa Institute of Management, Ribandar, Goa, Vigana Jothi Institute of Management, Hyderabad, T.A. Pai Management Institute, Manipal, Institute for Technology and Management Mumbai and Institute of Management Development and Research, Pune.

Management Education at IITs

IITs (Starting with IIT, Kharagpur in 1951) traditionally have a strong foundation in Industrial Engineering. Subsequently, they developed considerable expertise in Operational Research and Systems. Their Humanities Departments in parallel developed competence in Organisational behaviour, Sociology and Human Resource Development. As a precursor to developing Management Education, most of the IITs started offering Master Degree Programmes in Industrial Engineering and Industrial Management. It is only during the past five years that the IITs have started to launch Management Schools with specialisation in Technology Management/Systems Management.

In 1993 IIT, Kharagpur started the Vinod Gupta School of Management (VGSOM) with a donation of US\$ 2 million from one of the alumni, Shri Vinod Gupta, Chairman, American Business Information Inc. This institute admits 30 students each year in its Master of Business Management (MBM) programme. It also admits students in its Ph. D. programme and offers Executive Development programmes for Industry.

IIT Mumbai commenced its School of Management (IIT SJMSOM) in the year 1996 with a batch of 31 students in its Master of Business Management (MBM) programme. It also runs Management Development programmes and Ph. D. Programme.

IIT, Delhi started its Department of Management Studies in 1993 but continued to offer the M. Tech programme in Management & Systems launched in 1978. However, in 1997, its M. Tech (Management & Systems) Programme was discontinued and two MBA programmes were launched. The two year full-time programme focuses on "Management System" whereas the three year evening part-time MBA programme focuses on "Technology Management". The intake in each programme is 60. the Department also offers a Doctoral Programme and Management Development Programmes.

IIT, Kanpur launched its MBA Programmes in 1998 while IIT, Madras started its MBA programme in the year 2001.

Sectoral/Functional Institutions

There is a growing awareness that management education need to respond to the unique situation and problems of specific sector/function. Accordingly, a large number of specialised management development institutes have come up in the sectors of Rural development, Management of Co-operatives, Forestry Management, Public Administration, Foreign Trade, Banking, Education, Labour, Construction, Health & Family Welfare, Agricultural Extension, Railway, Police etc. These institutions are sponsored and supported by the relevant industries. While most of these institutes have full-time and part-time Postgraduate Diploma Programmes, others specialise mainly in

executive Development Programme, Research and Consultancy. Some of the Sectoral Institutions have acquired recognition in respective fields and receive support from the concerned industry, Government and international agencies. A number of them conduct Executive Development Programmes with participation from developing countries in Asia & Africa. Thus, these institutions contribute significantly to the professionalisation of management in the respective sectors. Institute of Rural Management is a case in point.

The functional institutes are normally professional bodies offering Postgraduate qualifications in their functional areas of management. Such institutes cover Industrial Engineering, Operational Research, Personnel Management, Materials Management, Accountancy, Finance, Computer Application etc. These functional institutes organise Annual Convention and Executive Development Programme through their branches in different parts of the country.

Many of the well known management institutions have felt the need for offering specialised Postgraduate Programmes in different sectors/functions. IIM, Calcutta identified the need for offering a MBA level programme combining information technology and management in 1994. They now regularly offer of Postgraduate Diploma in Computer Aided Management with a batch of 60 students. These students have high demand in information Technology Industries as well as in large Consulting and Business Organisations. From 1997 the Ministry of Human Resource Development, Government of India, has started a national level institute named Indian Institute of Information Technology & Management (IIITM) at Gwalior. It admits a batch of 30 students in its 2 year Master level Postgraduate Diploma in Information Technology and Management (PGDITM) programme.

Faculty of Management Studies (FMS), Delhi University offers MBA programmes in Public System Management, Health Care Administration and also Diplomas in marketing Management, Finance Management, Production and Operational Management, Human Resource Management and Small Business Management.

Jamnalal Bajaj Institute of Management Studies, University of Mumbai offers evening programmes leading to Masters of Marketing Management, Finance Management and Administrative Management. Affiliated Institutes under Mumbai University also offer these courses.

Indian Institute of Social Welfare and Business Management (IISWBM), Calcutta, offers Master level Postgraduate Diploma courses in Human Resource Management, Environment Management, Energy Management, Transport Management and Hospital Management. These are, over and above, their MBA programmes awarded by the Calcutta University.

The above are some of the typical examples of management institutes offering specialised programmes in sectoral/functional area.

Distance Education

The leaders in Distance Education are Indira Gandhi National Open University (IGNOU) and All India Management Association (AIMA). While the contribution of AIMA has

been covered earlier, we need to highlight the role of IGNOU as a national open university set up by an Act of Parliament in November, 1985. The School of Management Studies (SOMS) of IGNOU was established in late 1986. A pilot programme on Diploma in Management through School of Management Studies was started. About 3,500 students joined the programme. The students were required to have at least 3 years managerial/supervisory experience. Subsequently this number went up to about 5,000 in 1988, 6000 in 1989/90 and 7,500 in 1991/92. Additional programmes were added subsequently - Advanced Diploma in Management in 1988, Specialisation Diplomas in Management (SDM) in 1990 (These included Financial Management, Human Resource Development and Marketing Management). An Integrative Module was added in 1991. The students qualifying in Diploma in Management/Advanced Diploma in Management, one of the SDMs and the Integrative Module are awarded MBA Degree by the University. In addition to those who do SDMs in sequential fashion, direct entry for Specialisation Diplomas in Management was opened up in 1991, 3,760 students were admitted in 1991 and 5,530 in 1992.

From January, 1992 a new system - course - wise registration - of admitting students to management programmes was introduced. Under this system students are not admitted to Diploma in Management but to the Management Programme and they can choose courses most suitable to them if they so wish. They can even take individual courses not for the purpose of finishing diplomas and degrees but for professional enrichment and can get certificate of completion for doing such courses. Currently about 50,000 management students are enrolled by IGNOU.

There are about 76 Distance Learning Institutes (DLI) and 10 Open Universities.

Some Important Issues in Management Education

Professional Model Vs Academic Model

It has been mentioned in the historical background that the University of Chicago spearheaded the Academic Model for Management Education based on optimal resource allocation in the firm. On the other hand, Harvard Business School developed the Professional Model requiring a balance of judgement, knowledge and skill. In India, IIM Calcutta started with a bias towards academic Model because of its initial link with the Sloan School of Management of MIT. IIM Ahmedabad, because of its collaboration with the Harvard Business School, adopted the Professional Model and based to a great extent on case studies. Over the years, however, the academic model and professional model gradually got merged at IIMA and IIMC.

Quality of Management Education

Indian Management Schools can be broadly divided into three categories :

- i) IIMs and a dozen other private institutions which have a large body of full-time faculty and the capacity of generating adequate resources to manage their Teaching, Training, Consultancy and Research activities.
- ii) University Departments and Affiliated Institutes which have effectively small but

stable faculty; some of these Institutes are located in large cities to maintain their quality by borrowing visiting faculty from business and industry.

iii) Private establishments mostly with grossly inadequate resources and poor image.

All India Council of Technical Education (AICTE) is playing a pivotal role in controlling the mushroom growth of Management Schools and to improve the quality of the already approved Institutions. The AICTE currently discourages autonomous private institutes and would like all the new institutes to be affiliated to University System. The AICTE has also set up a **National Board of Accreditation (NBA)**, to rank the Management Education Institutes based on the quality of their programmes, infrastructure etc.

Faculty Development

Availability of high quality faculty resources is totally inadequate to meet the requirements of rapid growth of Management Education. In this respect high quality teaching resources are best available from the Fellowship Programmes (Ph. D equivalent) of IIMA, IIMB and IIMC. However, the total output of Fellows from these Institutions amounts to about a dozen per year.

The University system produces a large number of Ph. Ds in disciplines relevant to Management like Statistics, Economics, Psychology, Computer Science etc., but the availability of people with adequate quality and potential for development is quite limited. Management Departments of the Universities and IITs do produce Ph. Ds in Management but their number is small. The availability of faculty is particularly limited in the functional areas, specially Marketing and Finance. Even IIMs have to depend heavily on quality professionals from business and industry as visiting faculty in these subjects. Many of the bright MBAs from the leading Institutes/Universities could have been excellent faculty members in management institutes, but most of them prefer a highly rewarding career as a professional or to move to North America for their Ph. D. and eventually join as faculty member in leading Universities there.

Placement of Graduating Students

The top 20 Management Schools have little difficulty in placing their graduating students through campus selection. In the case of IIMs all graduating students not only get a job of their choice before leaving the Institute, their average monthly remuneration has been rising steadily. While in 1992 the average starting package was about Rs. 6000/- per month, in 1998 this average has crossed Rs. 25,000/- per month for offers from Indian companies. Another interesting feature is that a large number of foreign companies have started participating in the campus selection process offering a starting salary ranging from US \$60,000 to 80,000/- per annum. In fact many of the Indian companies are finding it difficult to recruit IIM graduates and even if they are able to attract these graduates initially, they find their turnover rate to be too high to derive benefits for their organisations. The performance of the other leading Management Institutes compares well with that of the IIMs in terms of campus placement.

A rough estimate is that about 6,000 of the total graduating MBAs get jobs commensurate to their expectations and the balance end up with non-managerial jobs or jobs in small-scale enterprises and NGOs.

Cost of Management Education

Till 1991-92 the IIMs used to charge about Rs. 6,000/- for the two year course inclusive of residential accommodation. Such fees remained fixed from the very start in 1964 till 1991, resulting in high subsidies from the Central Government. With the advent of the new Economic Policy in June 1991, the Government started questioning the rationale of such high subsidies for higher education in general and Management Education in particular. Consequently, over the past 7 years IIMs have gradually jacked up their fees for the two year residential programme from Rs. 6,000/- to Rs. 3,00,000/-. Thus, most of the IIMs are now self sufficient on the revenue account, though they still depend heavily on the Government on capital account for building and upgrading their infrastructure.

The Universities, on the other hand, had a fee structure of Rs. 200/- per annum for all education including Management Education.

Indian Ethos in Management

There is a growing feeling amongst management educationists and practitioners that some elements of traditional values, culture, heritage and ecological ethics can make management education more effective in the Indian context. To site an example, Japan made a grand success of the Total Quality Management (TQM) Concept, while initially such a concept was not appreciated by the West. Also, while there is no denying of the need of hard analytical tools in Management Education, the role of softer concepts based on social values and culture play a key role in developing a holistic and intuitive capability for a more acceptable and effective decision making process.

Towards providing valuable insights into the relevance of Indian ethos for modern management practice and development, IIM, Calcutta has set-up a unique Management Centre for Human Values under the leadership of Prof. S.K. Chakraborty. This center conducts a large number of Executive Development Programmes and In-Company Programmes to spread the concept amongst senior executives. They also organize an International Workshop every year with an increasingly large number of participants from abroad, particularly from USA, Europe and Australia. With the spreading of such experiments we would probably develop an Indian ethos in Management as a distinct model for management education in the future.

Networking for Management Education Institutes

In order to improve the quality of Management Education it is vitally important to Network the Management Institutes in India. The Indian Network can be a partner in the Regional & Global Networks of Management Development Institutes. A major step in this direction was taken in 1988 with the formation of the *Association of Indian Management Schools* (AIMS) as a professional body of Indian Management Schools

with Prof. J Philips as the Founder President. The mission and objective of AIMS is to function as the professional association of Management Education concerned with quality of management, manpower training and development, management research and curriculum development. It was to take all steps on its own or in collaboration with other agencies, for the promotion of management education in India. It has of date 350 members. The membership is open to National Institutes of Management, University Department, other Management Schools offering long duration postgraduate programmes and Institutions offering postgraduate management education in functional areas, such as marketing, finance, personnel, production management, industrial management, industrial engineering etc. or sectors such as banking, forestry, transportation, health, rural development, etc. AIMS is the second largest management school network of the world.

To pursue its goal of contributing to quality upgradation of Indian Management Education System and to further open it up to the developments in the West, a collaborative project has been developed with the Canadian consortium of Management Schools (CCMS) with funding from CIDA. The project's central focus is to enhance the quality of degree level management education, networking of these institutions exchange experience with other national and regional bodies and effective interaction and collaboration with the collectivity of Canadian Management Schools through CCMS. This Canadian \$500,000 Project has the approval of the Government of India and is now operational.

AIMS is a member of the International Management Development Networks (INTERMAN), set up by the UNDP and ILO at Geneva. Fifteen leading Management Development Networks of the World are the constituents of INTERMAN covering North America, South-East Asia and Australia. The International Management Development Network meets once in a year and they had the 2nd Annual Meeting at IIM Calcutta, in December 1995. Once in four years, a Global Workshop was organized under the banner of INTERMAN. This forum helped to develop global contacts for the Indian Management Schools.

Future Direction in Management Education

Currently there are more than 900 Management Institutions in India with a total intake of over 70,000 students per year in MBA and equivalent courses. India is the second largest MBA producer in the world. Many of the thinkers on Management Education are now seriously questioning the appropriateness of a Western Model of Management Education in India. They are of the opinion that the Western Model is creating more problems than they are solving. In spite of this feeling, Management Institutions in India are blindly copying leading western institutions like HBS, Sloan, Wharton, Kellogg, London Business School, Manchester Business School, INSEAD etc. The most recent example is a purely US model Management School being set-up in Hyderabad under the patronage of top industrialists of the Country and the Chief Minister of Andhra Pradesh.

Foundation of the Western Model

The Western Model of Management Education is based on the following hypotheses :

1. Human behaviour and motivation is guided by the fulfillment of human need as propounded by Freud, Maslow, McGregor, Mintsberg and others. The primary human need is defined as material need with the non-material dimension playing a relatively minor role. Human Resource Management in organisations are based on this fundamental hypothesis.
2. Organisations must survive and flourish under free competition resulting in only a few dominant organisations in each segment of industry.
3. The focus of business and industry is to serve the customers to their fullest satisfaction at the lowest possible price leading to a higher share of market and a high rate of return on the shareholders capital. Market led economy and consumerism are the main forces guiding the economy.
4. Organisations are free to hire and fire employees based on the behaviour of the market and technological change. However a strong social security net provided by the State looks after the interests of the unemployed workmen.

Dangers Associated with the Western Model

Negative Aspects of Market Economy

A strong critic of consumerism, D.C. Korten writes in his book *When corporations Rule the World* published by Berrett-Koehler in 1995 : 'An active propaganda machinery controlled by the world's largest corporations constantly reassures us that consumerism is the path to happiness, government restraint of market excess is the cause of our distress, and economic globalization is both a historical inevitability and a boon to the human species. In fact, these are all myths propagated to justify profligate greed and mask the extent to which the global transformation of human institutions is a consequence of the sophisticated, well-funded, and international interventions of a small elite whose money enables them to live in a world of illusion apart from the rest of humanity. These forces have transformed once beneficial corporations and financial institutions into instruments of a market tyranny that is extending its reach across the planet like a cancer, colonizing ever more of the planet's living spaces, destroying livelihoods, displacing people, rendering democratic institutions impotent, and feeding on life in an insatiable quest for money'. While we need not agree to this view, we should not ignore the issues raised by Korten. Multinationals and globalisation is a reality and a help in the process of rapid development but then the negative aspects need to be safeguarded.

Environmental Degradation

1998 is the hottest year on record in this world. The fourteen hottest years on record have occurred since 1980. Global warming causes extreme weather. El Nino of 1997 was the most severe in history. In 1998 and 1999, 56 countries have experienced catastrophic floods and 45 have experienced severe drought. Reported weather disasters

show exponential increase in major events. Antarctica is 2.5 degrees Celsius warmer than in mid 1940s. The Larsen Ice Shelf started breaking up three years ago. In October 1998, a 7125 square kilometer block separated from the Ronne Ice Shelf. If the west Antarctic Ice Sheet breaks off, sea levels could rise 5 meters within a decade. Alpine glaciers have declined by 50% by the last century. Alaska, Siberia and North Western Canada have warmed by 3 degrees Celsius in the same period. While the average temperature on the Earth's surface had risen by about 0.6 degree celsius between 1880 and 1980, the increase has rocketed to 0.8 degree celsius in the next twenty year.

Nearer home, in the Indian sub-continent, two-thirds of Bangladesh was under water for more than a month in 1998. Only recently Orissa faced a devastating cyclone killing more than 10,000 people. Not too far away Vietnam faced two severe floods in 1999. In India due to population pressure and rapid urbanisation/industrialisation, the forest area has shrunk to an alarming level of only 11% of the total land while 20% is the minimum requirement for ecological balance. Automobile pollution is suffocating all major cities with rapid increase in related diseases.

Maldistribution of Wealth

An environment of unbridled competition results in the survival of the fittest with consequent wide disparity of income. The richest 20% of world's population receives 82.7% of the total world income, while the poorest 20% receives only 1.4%. Global economic growth rarely filters down. Increased automation requires fewer people in the production process and the argument is that such increased productivity opens up large scale employment in the service sector. The validity of this logic needs to be probed.

In India there are 220 million people in the middle class and above which is nearly equal to the total population of USA. Therefore, all the multinational companies think that India is a very big market. Little do they realise that out of a total population of 1 billion, 260 million are below the poverty line and cannot afford two square meals a day. We are actually sitting on the top of a volcano, which could erupt any time.

Wisdom of the East

'Giving' vs 'Needing' Model

Each human being has a soul. Narrow self-centred material-need based activities denote a lower order animal existence for human beings or corporates. We need to rise above our selfish interests and supplement it with enlightened self-interest. This is the message of the spirit of human existence. If we do not follow this basic message of humanity as propagated by our great spiritual leaders like Swami Vivekananda, Rabindranath Tagore and Rishi Aurobindo, we may be heading for the doomsday in not so distant a future. Intrinsic and enduring motivational strategies need to be based on the 'GIVING' model rather than on the 'NEEDING' model.

Blending Spirituality with Materialism

In the East, spirituality is a way of life, differentiating human values from animal

existence. While we do have our material needs for the self and family, our ultimate goal is spiritual enlightenment. We therefore need to blend our material and spiritual needs for a holistic view of happy living. We do not believe that the search for material prosperity alone can lead to a balanced and satisfying life. Our belief is that a process of meditation in search of a quality - mind helps us to understand ourselves and leads to a better synchronisation of the body and the mind towards a richer life. We also believe that having met the basic material requirements of life, spiritual pursuit is the main motivator helping human beings to achieve great heights. Instead of acting on external stimuli in search of excellence, we should be guided by internal inspirations.

Developing Both Left & Right Side of the Brain

Management education model of the West fully develops the left side of the brain that controls the logical, sequential and analytical aspects of decision making. There is hardly any emphasis on developing the right side of the brain controlling the holistic, intuitive and random access features that are so vitally important for a complex decision making process. Meditation or a quality-mind-process is a proven mechanism for the development of the right side of the brain.

Eco-friendly & Employment Oriented Growth

In a populous country like India following a unbridled Western model of market economy/consumerism can prove to be disastrous for the entire world because of global warming and other forms of environmental pollution. Such acute maldistribution of wealth with 26% population below the poverty line may lead to an unstable society with the advent of 'mafia raj' as well as Naxalite type of extremist movements.

Blending the Best of the East and the West

The West has taught us how to organise efficiently using technological innovations like information technological and biotechnology in a market economy. The East however advocates a holistic approach with respect to human happiness through a balanced view on environmental protection and distribution of purchasing power to avoid the disaster implied in the western model.

A copy of the West cannot be the solution for an over populated country like India. Following the Western Model we are over obsessed with the organized sector, employing only 8% of our 320 million of labour force. Most of the labour law in this country protect this 8% work force accounting for hardly 26 million workers with little attention to the balance 92% or about 300 million workers. The labour unions of the organised sector have the power to paralyse the entire economy and thereby getting away with a lion's share of benefits. With business process reengineering, including the extensive use of Information Technology, the surplus labour in the existing organisations will increase requiring voluntary separation for even higher numbers. Though a large number of new companies are coming into existence following Economic Liberalisation, these new organisations will be highly automated requiring very few employees. The organised sector of business and industry is therefore unlikely

to provide significantly higher employment opportunities in the near future. The prospect apparently lies on the nurturing of the unorganised sector and the service sector for improving the lot of nearly 90% or about 300 million of our total work force. In this respect India has a tremendous advantage compared to most of the other countries in the world in rapidly improving the future of our entire working population through a growth model that is labour intensive, eco-friendly, export oriented and based on our competitive advantage of cost, skill and natural resources.

Of the 320 million work force (which is roughly 1/3rd of the total population) of India, 170 million (about 53%) are employed in Agriculture. India ranks 2nd in the world in terms of arable land and also in irrigated area. It ranks 1st in the world with respect to production of milk and milk products, sugar and tea, and 2nd in terms of rice, wheat, groundnut & tobacco, and 3rd in cotton. This country is blessed by nature with plenty of sunshine, rainfall and a moderate climate resulting in three and sometimes four crops per year in the irrigated land.

However, the yield per crop is only 30% of world standard, indicating scope for 3 to 4 fold increase in output through the timely, proper and extensive use of water, high breed seeds, bio-friendly insecticides and fertilizers. Fortunately, extensive use of labour saving productivity tools like tractors and harvesters are unlikely in India for quite sometime to come, because of the pattern of landholding (in numerous distributed plots). Even at the current level of productivity, our agricultural produce is one of the cheapest in the world and, as expected, most of our 16% per annum export growth in the past six years was derived from cotton and silk textiles, jute products, tea, coffee, rice, spices, herbal drugs, fruits, vegetables, floriculture, pisciculture, oilseeds/oilcakes, tobacco based products, etc. Very few countries in the world possess this fundamental strength. We can not only protect employment of over 50% of our entire working population in this unorganised sector but also improve their real earnings through increased productivity, resulting in a booming economy with strong domestic - cum - export demand. With policy level support to water resource management and timely availability of high breed seeds, insecticides and fertilizers, it is possible to double our agricultural production in the next 3 years to become the largest exporter of agriculture and agro-based products in the world. This will of course require strengthening of transportation and storage infrastructure, and setting up of world class agro-based industries. Other such sectors are Tourism, Computer Software, Gems, Jewellery and Handicrafts, Multimedia entertainment, Health Service & Education.

Contributing to Quality of Life

Nobel Laureate Prof Amartya Sen and Prof Mqbul Haque developed an index titled *Human Development Index (HDI)* combining per capita income, longevity and knowledge base of a country to indicate its quality of life. According to this index India ranks 139 out of 174 countries while Canada is on the top. To improve our quality of life we need to concentrate on better management of the public systems and infrastructures like Communication, Transportation, Health, Education, Energy & Environment. We must focus our attention on a war footing on primary and adult

education. We must protect our natural environment through a social movement and strict enforcement of law. We need to inculcate a value system in the society at large with emphasis on ethics and human values like minimal corruption and high work ethics through intrinsic motivation. By addressing these vital issues a better quality of life may combine with higher economic growth in the next decade, resulting in a stable and relatively prosperous society.

Conclusion

Management Education in India has come a long way starting from scratch after independence. The country's total intake to Master level programmes in management has crossed 75,000 excluding distance learning programmes. The total number of Management Schools is, currently, second to only USA. The graduates of top institutions have had high acceptance rates in premier foreign organisations and world renowned management consultancy firms as professionals and also in leading foreign universities as teachers. Members of alumni hold senior positions in large multinationals and that too with credit.

But challenges remain and due to the dynamic state of flux that the economy is in, the need for management educators to shape new policies and adopt new directions remain paramount and ever challenging. Management education should, therefore, concentrate not only on numbers but also on quality. India needs to focus attention on producing high quality teachers by emphasizing on faculty development programmes. India must concentrate on producing sufficient number of quality Doctorate in management. Currently the number of Ph. D/Fellow produced by Universities/Management Institutes are inadequate to meet the faculty need for such a large number of MBA programmes. The quality of some of the Ph. Ds produced by Indian universities remains questionable due to non-MBA background and lack of experienced guides. In order to attract high quality students for research leading to Ph. D, there is a need to grant attractive scholarships and fellowships. From total development of management teachers, they should be encouraged to participate in at least two or preferably three of the four activities, namely teaching, training, consultancy and research. Though, the premier management institutes have lately oriented their programmes towards globalisation and international business, most of the other institutes are weak in this area.

We need to modify our Management Education curriculum for holistic approach. The basic management curriculum should include *Values & Culture of Mankind, Management by Human Values, Ecological Ethics & Environment Management. Developmental Economics, Post-Capitalism. Implications of WTO & IPR. Public Systems Management, Corporate Governance & Corporate Citizenship. Vedantic World view & Management and Comparative Ethos in Management* in addition to the standard subjects now being covered in the areas of Mathematics & Statistics, Costing & Accounting, Behavioural Sciences, Economics, Finance, Industrial Relations & Personnel, Operations, Marketing, Quality Management, Strategy, Legal Environment,

Business Ethics and MIS & Information Technology. The students need to practice at least half an hour of meditation each day for better control of the mind and the body. Such a curriculum will then combine *the Best of the East and the West* by simultaneous development of the left and right side of the brain resulting in a breed of new generation managers to meet the challenges of the new millennium. While we should learn from the West the techniques of developing efficient organisations, we should temper such knowledge with a holistic view on the progress of the organisation while ensuring a better quality of life for the society, the country and better still, for humanity at large. Such a change in Management Education is a must for a balanced development and for saving the world from an impending disaster.

India has now reached a level in Management Education when we can try to attract foreign students from all over the world to study at our leading institutions. This is not happening in an organized manner and instead, many of the universities in the UK, USA and Australia are marketing their management courses to Indian students at a very high cost in hard currencies. India needs to tackle this vital problem at a national policy level.

From June, 1991 the Government has started questioning the justification of providing subsidy to management education, since the beneficiary is mostly business and industry. During the past six years attempts have been made to make management education self supporting by charging higher fees from the students and also by developing closer interaction between business/industry and management education. This is a step in the right direction and the country should demand more and more organized support from private and public sector for developing management institutes of a global standard.

The premier management schools which have a reputation world-wide, should rapidly increased their intake by balancing their infrastructure. The concept of a standard class size of 60 may be relaxed for these institutes ensuring latest design of the classrooms with modern audio-visual teaching aids. Even in the top ranking management schools of the West the class size very often goes up to 120. Such judicious relaxation will help to increase output of quality management graduates by making better use of the world class infrastructure of our top schools.

With the rapidly improving information technology networks in the country and the advent of personal computers connected to the Internet, the future direction of management education points towards digitally connected distance classrooms on an interactive mode. In view of shortage of good management teachers and the need of effective distance learning programmes for working personnel, India needs to concentrate on this multi-media mode of management education that can be availed of at all corners of the country at an affordable cost. Only then, India will be able to train managers for all organisations small or big, profit making or non-profit making. Government or NGOs - for effective use of national resources by cashing on local and global opportunities.

G-145967

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Prediction of Class Twelve Physics Scores using Students Psychological Variables

*Paromita Ghosh**

Students getting admission to the science stream at the higher secondary stage are offered the opportunities of studying science by choice for the first time in their educational lives. It may pave the way for higher studies and successful careers in science. But for some students who either lack or have deficits in the characteristics needed to meet the academic demands of the plus-two level science course, the experience can be painful. These hapless students usually suffer from underachievement, failure, frustration and a host of other psychological problems. So the identification of the student characteristics which are closely related to and can help predict academic achievement in the different science subjects at this level seems to be the need of the hour.

The review of the relevant literature reveals that there are a plethora of individual-level psychological variables of students bearing relationships to their achievements in science subjects at the plus-two stage. However, it is practically impossible to analyze the roles of all or most of these variables within the limited scope of the present study. So some of these variables which appear to be among the important correlates (as evident from previous research) have been selected to examine if they can collectively serve as good predictors of physics scores at the higher secondary level. These variables include cognitive ones like intelligence, cognitive style, scientific knowledge and aptitude as well as non-cognitive ones like self-concept, neuroticism and extraversion-introversion. The variable of study habits falling in between the cognitive/non-cognitive dichotomy was also selected.

Intelligence as well as scientific knowledge and aptitude were found to influence science-achievement at the plus-two stage (Pal, 1982; Adigwe, 1993). As for cognitive style, it emerged that field-independent students achieved higher in science (Salinas, 1978; Varma and Thakur, 1992). Study habits seemed an important correlate of higher secondary science scores (Jamuar, 1978; Tiwari, 1982). Close association between self concept and academic achievement have been reported (Singh, 1983; Pal and Tiwari, 1984). Introversion and low neuroticism were found to be related to higher achievement in higher secondary science courses (Mohan et al., 1975; Jahan, 1985).

Objective

Therefore, it was decided to determine whether students' psychological variables viz., scientific knowledge and aptitude, study habits, cognitive style, self concept, neuroticism, extraversion and intelligence can collectively predict class twelve physics scores.

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Hypothesis

It is expected that physics scores of class twelve students can be predicted using their abovementioned psychological variables.

Method

Sample :

248 boys studying in class twelve (science stream) at seven Kendriya Vidyalayas of Kolkata and its suburbs comprised the sample. The boys belonged to middle socio-economic status families. The sample was an area sample.

Tools :

1. Chatterji and Mukherjee's Scientific Knowledge and Aptitude Test to measure scientific knowledge and aptitude (S K A).
2. Palsane-Sharma Study Habits Inventory to assess study habits (SH).
3. Witkin's Group Embedded Figures Test to assess field dependent -independent (FDI) cognitive style.
4. Eysenck Personality Inventory to measure neuroticism (N) and extraversion-introversion (E-I).
5. Mohsin Self Concept Inventory to assess self concept (SC).
6. NIIP Non-Verbal Group Test 70 to measure intelligence (Int).
7. Kuppuswamy's Socio-Economic Status (SES) Scale to assess SES for controlling it.

The marks obtained by students in class twelve half yearly physics examination [Phy] were noted from records. Physics was chosen for being a compulsory science subject. Class twelve half yearly marks were considered as the students were expected to have consolidated learning after studying the plus-two science course for the past eighteen months.

Statistical Analysis :

Means and S.D.s were calculated for each of the relevant variables. Product-moment correlations between pairs of variables were computed arranged as a correlation matrix. Multiple Correlation was calculated and multiple regression analysis was conducted. Significance tests at .01 level were carried out.

Procedure

Area sample of class twelve science students were drawn from seven Kendriya Vidyalayas of Kolkata region. Then the SES scale was administered to include only subjects of middle SES families in the final sample (N=248) to ensure homogeneity. Next, psychological tests were administered to subjects of the final sample. Scoring was done to obtain raw scores. Examination scores were noted from records. Then statistical analysis was carried out, results were obtained and discussed.

Results and Discussion

The obtained results are presented in the following tables 1 to 4. In the tables, short names of the variables (mentioned in the subsection "Tools" are used for the sake of brevity. Since it is necessary to know the means and S.D.s of the scores obtained by the sample in respect of all the variables, so these values are shown below in Table-1.

Table—1

Means and Standard Deviations of the Sample (N=248) with respect of the Relevant Variables.

Variables	Mean	S.D.
Phy	55.00	16.76
SKA	43.87	11.15
SH	54.82	13.92
FDI	9.21	3.04
SC	29.30	5.77
N	11.94	2.90
E-1	11.92	3.61
Int.	60.57	7.75

After examining the values presented in Table-1, it seemed worthwhile to know the pattern of interrelationships among the variables. So product-moment correlation coefficients between each pair of variables were calculated, tested for significance and presented as a correlation matrix in Table-2.

Table—2

Correlation Martix for Boys having Physics (N=248)

	Phy	SKA	SH	FDI	N	E-1	SC	Int
Phy	1.00							
SKA	0.57**	1.00						
SH	0.42**	0.75**	1.00					
FDI	0.45**	0.49**	0.39**	1.00				
N	-0.20**	-0.22**	-0.22**	-0.21**	1.00			
E-1	-0.36**	-0.42**	-0.41**	-0.37**	0.07	1.00		
SC	-0.01	-0.09	-0.09	-0.02	0.06	0.02	1.00	
Int.	0.37**	0.49**	0.53**	0.36**	-0.12	-0.34**	0.01	1.00

** $p < .01$

Scrutiny of Table 2 shows that scientific knowledge and aptitude, study habits, field independence and intelligence are positively and significantly associated with class twelve half yearly physics scores. Thus the outcomes of previous researches (e.g. Pal, 1982; Adigwe, 1993; Salinas, 1978; Varma and Thakur, 1992; Jamuar, 1974; Tiwari, 1982) are verified. But neuroticism and extraversion were found to be negatively but significantly related to the physics scores revealing that introversion and low neuroticism are associated with higher achievement in physics. So the findings of Mohan et al. (1975) and Jahan (1985) are confirmed. However, self concept was found to have a negligible relation with physics scores perhaps because a measure of global rather than academic self concept was used. Thus the findings of Singh (1983), Pal and Tiwari (1984) are not verified.

In order to verify the hypothesis of the investigation as stated earlier, multiple regression analysis was conducted using the scores on the psychological variables as predictors. Class twelve physics score was the dependent variable. The results of the analysis are presented in Table-3 which follows.

Table—3
Results of Regression for Physics Scores (N=248)

Variables	Regression Coefficient	Standard Error
SKA	0.65	0.12
SH	-0.10	0.10
FDI	1.04	0.33
SC	0.10	0.15
N	-0.40	0.30
E-1	-0.50	0.27
Int	0.19	0.13
<div style="display: flex; justify-content: space-between; align-items: center;"> <div>Multiple R = 0.62**</div> <div>Intercept = 18.05</div> <div>Multiple R² = 0.38</div> </div> <div style="margin-top: 5px;">** p < .01</div>		

Table-3 shows that the value of the coefficient of multiple correlation is significant at .01 level of significance. So the physics scores of class twelve half yearly examination can indeed be predicted using the chosen psychological variables. Therefore, the hypothesis of this investigation, as stated before, is verified. However, the value of the coefficient of multiple determination is 0.38 indicating that only 38% of the variance in physics scores can be explained by these psychological variables. Such an outcome is not surprising because (as mentioned in the Introduction) there are a plethora of psychological variables influencing science students' examination performance other than the important ones selected for the present study.

Finally, to ascertain whether the above regression (Table 3) is significant or not, ANOVA was carried out using the coefficient of multiple determination. The results of the ANOVA are summarized in Table-4.

Table—4
Summary of ANOVA : Regression for Physics Scores (N=248)

Source of Variation	Sum of Squares	df	Mean Square	F
Regression	26654.75	7	3807.82	21.37**
Residual	42766.24	240	178.19	

** .p < .01

Table-4 shows that the F value is significant at .01 level. Thus the regression presented in Table 3 is significant. So it appears that the prediction of class twelve physics scores using the chosen psychological variables is certainly possible.

CONCLUSION

From the results, it seems that scores obtained by boys in class twelve half yearly physics examination can be predicted using a group of psychological variables viz., scientific knowledge and aptitude, study habits, cognitive style, self concept, neuroticism, extraversion and intelligence.

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A study of scoring history answer scripts at the higher secondary level

*Kutubuddin Halder**

*Aditi Chatterjee***

Meaning and evolution of Examination

Good (1959) in the *Dictionary of Education*, defined examination as an appraisal of ability, achievement and the instrument used in such appraisal. This succinct statement shows how examination, as a tool of appraisal, is integral to every step of the education process; elemental cog in the triad of educational goals, efforts and evaluation going hand in hand complimenting and completing each other.

Examinations remain necessary for teacher to judge student entry behaviour, identify general and specific objectives, selecting teaching learning programmes, assessing achievements and using the results of feedback. For students it creates awareness of objectives increases motivation, enhances activities skills and encourages study, it helps the administrations to keep track of students and institutional progress and is an important basis of guidance. It helps parents to be well versed about the performance of their children.

The first written examinations can be traced to ancient China. Examinations were an integral part of the Vedic Buddhist systems of education and scholars had to pass difficult examinations in the ancient Indian universities like Nalanda and Taxila.

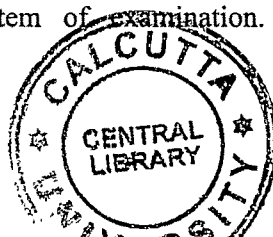
In trying to provide a historical rationale for examinations, Mascarenhas (1991) states that they rose out of the need of a teacher to give a public manifestation of the effectiveness of his teaching through a display of the talents of his students or for the students to win fame. Later, in evolving scientific age, nations needed to be properly equipped, to make themselves excel in the mad scramble for imperialism and capitalism. Specialists could only be selected from a credentialing system of examination. It was thus an instrument of liberation-giving the individual approbation of society, the nation a standing among nations through expertise of tackling multiracial, technocratic problems of a stagnant society. In modern India, written examinations were instituted with the establishment of the universities of Calcutta, Madras and Bombay in 1857.

Need for reform of Examination

The effectiveness relevance and purpose of examination have been open to intense criticism and controversy. Simultaneously efforts at reform had also been initiated. The Hunter commission (1882) urged improvement in the system of examination. The Indian

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Universities Education commission (1902) pointed it to be the greatest evil from which higher education suffered since it had subordinated teaching under it. The Calcutta University Education commission (1917-19) recommended the establishment of a Board of Secondary Education to remove shortcomings of the examination system. The Hartog committee (1928-29) condemned the academic bias of examinations since it provided no opportunity for industrial, commercial and technical courses for preparation of life. The undue importance given to examination in the Indian educational system made teaching and learning examination oriented, a closed and narrow activity. Instead of assessing the all round development of cognitive, connative and affective abilities of students, examinations have been restricted to the measurement of cognitive abilities alone. Much of the true colour and purpose of education have been lost.

The Radhakrishnan Commission (1948-49) suggested examination to be the single most area for informs. The examinations today dictate the curriculum instead of following it, prevent any experimentation, hamper the proper treatment of subjects and sound methods of teaching, foster a dull uniformity, encourage the average student to concentrate too rigidly upon too narrow a field and thus help him to develop wrong values in educations... . It recommended that essay type items be supplemented by objective item and the work done by students throughout the year to be taken into consideration and one-third marks reserved for it.

The Mudaliar Commission (1952-53) suggested a reduction of the number of textual examinations and subjective type items. In order to make evaluation continuous and comprehensive, internal assessment should be made a part of final assessment and stressed on the introduction of a grading system. The Education Commission (1964-66) reiterated that evaluation should be continuous and the standard of examinations should be raised to make them valid and reliable measures of educational achievement including non-cognitive learning. It emphasized the need to set up an evaluation organization in each state to prescribe and maintain standards of education. Based on suggestions laid down by the Kothari Commission and the committee on examination set up by the CAGE, the UGC examination reform: a plan of action (1973) stressed internal assessment as an integral part of the teaching programmes of institutions and the implementation of the grade system.

The **NPE -1986** envisaged evaluation to be an integral part of the teaching process. Its recommendations were continued in the modified **NPE-1992**: public examinations will continue to be held at the end of Class X and XII; the conduct of evaluation work should be decentralized; protection should be given to people concerned with evaluation and invigilation due weightage should be given to institutional assessment in addition to external achievement; only subject teachers should evaluate.

In spite of all suggestions and recommendations about the necessity and urgency of reform, its pace has been extremely slow and erratic. There are some common discrepancies, especially in the aspect of scoring scripts, which have continued to linger in spite of pious attempts made through the decades. The present paper aims at pointing to the subjective variation in scoring history answer papers empirically.

Review of related literature

While reviewing related literature it was found that some researchers have conducted their studies in this area. Harper (1970) undertook an investigation called Ninety Marking 10 under the NCERT where 90 photographically exact copies were made each of 10 history answers assessed as papers. Ninety experienced examiners marked the 10 answer scripts. Wide range of differences was noticed in the reexamined scripts. There was no agreement on the average merit of the 10 candidates. They varied from 16% to 44%. Pass percentage range from 10% to 80%. Surprisingly the only answer script considered worthy of distinction by one was assessed as failed by 7 and 8 gave it first class. In another critical study Dabir (1984) analyzed B. Ed results of 5 consecutive years in Nagpur College where there was wide disparity of marks in external theory and internal practical examinations. Kushwaha (1985) studied the examination system of Kanpur University and saw the importance of internal assessment as a complement to external examination. Misra (1970-71) made three separate investigative studies into the item indices of essay item, their discriminatory values and the effects of examiner variability on difficulty indices of essay item. The study revealed that the scores changed significantly from examiner to examiner.

Review of related literature reveals that not much attention has been given to the inter examiner variability in the scoring of answer scripts of social science subjects especially in History. Extensive studies are necessary to explore only this single anomaly of assessing the answer paper.

Objective of the study

1. To examine the inter-rater inconsistency in scoring History answer scripts of Class XII.
2. To suggest some measures to minimize the problems of scoring history answer scripts of Class XII.

Tools used

1. Question paper of History paper I of test examination for Class XII prepared by a teacher of a reputed institution: The test was framed in three parts-Group A, B and C. Full marks were 100 and time given for the test was three hours. Each item of the Groups A, B and C carried 18, 12 and 2 marks respectively. Item in Group A and B were of essay type while Group C had short answer type item. Choice was provided.
2. An unmarked answer script of history paper I of test examination for Class XII.
3. An opinionnaire on remedies of scoring problem: the researcher prepared it.

Sample

Nine examiners of West Bengal Council of Higher Secondary Education having more than five years experience as examiners were selected randomly.

Collection of data

The unmarked answer script, question paper and scoring sheet were photo copied. A copy of each was sent to each examiner along with instruction. The researcher collected the filled in scoring sheet and examined answer script. Further data was collected through the opinionnaire from these examiners and five other experts.

Analysis of data

Data was analyzed both quantitatively and qualitatively.

Findings of the study

Fmdngs based on the data collected with the use of the tools were presented below.

Item-wise marks allotted by the different examiners

Group	Item	Marks	E1	E2	E3	E4	E5	E6	E7	E8	E9
Group A	1	18	Not attempted								
	2	18	Not attempted								
	3	18	9	8	8	10	12	11	8	9	10
	4	12	7	6	6	7	9	7	9	7	9.5
		6	3		2						
	5	18	Not attempted								
	6	12	9	6	6	7	10.5	7	9	6	8
		6	3.5	2	2	2	3	2	3	2	
Group B	7	12	7	7	7	7	8	8	5	4	7
	8	12	7	10	8	8	10	8	6	4	7.5
	9	12	8	8	7	7	9.5	8	8	5	7
	10	12	Not attempted								
	11	12	Not attempted								
	12	8	Not attempted								
		4									
Group C	13	2	1.5	2	2	2	1.5	2	2	2	2
	14	2	Not attempted								
	15	2	2	2	2	2	2	2	2	2	2
	16	2	2	2	2	2	2	2	2	2	2
	17	2	Not attempted								
	18	2	2	2	2	2	2	2	2	2	2
	19	2	Not attempted								
	20	2	2	2	2	2	2	2	2	2	2
Full marks		100	63	59	56	61	75	64	61	49	59

1. It was observed from the above table that there was wide variations in the total marks awarded while scoring the same script by different examiners which ranged from 49 to 75. The mean and standard deviation calculated to be 60.77 and 4.9 respectively.
2. A wide variation in marks allotted by different examiners in essay type items of 18 marks (item 6) was noted. Marks allotted ranged from 8 to 13.5. No examiner had awarded above 12 in answers to unsplit questions. When the question is split into 12 and 6 marks, students scored better. In the 6 marks part question scoring was more uniform.
3. Wide variations in scoring essay type questions of 12 marks (item 8) was present, the range of marks varying from 4 to 10.
4. In the short answer type question items (items 15, 16, 18, 19 and 20) there was a tendency to award full marks. Though scores were allotted uniformly, yet two examiners awarded 1.5 out of 2 marks.

Conclusion

The above data shows the reality of how teacher subjectivity has the power of creating variations in scoring. Examinations ought to be a true measure of student achievement and thus as objective as possible. All experts were of the opinion that essay type items in history should be continued, since it is a good way of assessing student abilities of logical thinking, organization, creative understanding, expression and appraising the development of essential values. Their suggestions were to make essay type items clear, precise and criterion based; to increased number of questions for a better sampling of the syllabus and for increased objectivity in scoring. Further, examiners are to be recruited not only on the basis of experience, but also, training to be provided by the West Bengal Council of Higher Secondary Education to acquaint them in the methodology of scoring. Preparation of model answers highlighting specific points and evaluation on the basis of it are to be included in the training programmes. Clear instructions for evaluation and score keys of particular questions, specific points expected from the students are to be given.

While holding forth a clear picture of how subjectivity influences scoring of history answer scripts, the study reveals several drawbacks of the Higher Secondary examination scoring systems and implies the urgent need for action research on, issue, to device practical ways controlling individual teacher influences on the allotment of marks and ensured objective and efficient assessment of student achievement in the history papers.

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Birth Order And Creativity

*Debasri Banerjee**

The advancement and progress of any nation depends on the creative citizens of that nation. Children are our future citizens. Identifying and nurturing their creative potentiality becomes the greatest responsibility of the adult members of the society.

In India, many talents and creative potentials seem to get nipped in the bud, because of so many factors. Some of which are - lack of proper methods of identification, the stereotyped teaching learning method, sex bias and constant hurdle and discouragement a non-conformist has to face in society.

Birth Order is the sequence by which children are born into a family. According to Sulloway (1999) birth order fosters differences in personality that in turn correlate with differences in creative achievement. Disparities in birth order cause siblings to experience the family environment in dissimilar ways leading to difference in social attitudes and openness to experience.

Identification and measurement of creativity had attracted the attention of Indian investigators since 1970's. M. K. Raina (1980), has referred to the attempts made by Passi (1972), Mehdi (1973), Kaul (1974), Ramchandrar (1974), to develop measuring devices of creativity adopted to specific Indian conditions. Paramesh (1972) attempted to develop biographical inventory for the identification of creativity. Ahmed (1977) developed the battery of creativity tests for Indian children.

Objective of the study

The purpose of this study was to see if birth order difference had any effect on creativity. That is to see whether single children, first borns and later borns differed in their creativity scores and if they did, in which factor of creativity they did so.

Method

Variables : The main variable for the present study was creativity. Creativity defies precise definition. It is a complex and multifaceted phenomenon of human behaviour. Some theories define it as the innovative combination of knowledge and imagination applied to the solution of problems. Some define it as a social phenomenon that is facilitated by some social factors and inhibited by others. Some focus on the individual person, and define it as an aspect of thinking as a personality constellation and as an interaction between thinking, personal properties and motivation.

Thus creativity is a complex blend of a number of abilities and traits. It is that process which results in a novel work that is accepted as tenable or useful.

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The author gratefully acknowledges the guidance of her respected teacher Prof. P. K. Chakraborti, in preparing this paper.

The main factors measuring creativity are -

- Fluency** – It is the number of relevant and unrepeatd ideas that the testee produces. Relevance is judged on the basis of the appropriateness of the response when considered in relation to the problem. An unrepeatd idea is one which has been expressed only once under a given problem.
- Flexibility** – It is represented by a person's ability to produce ideas which differ in approach or thought - trend. That is, how frequently one can change from one idea to another or from one class of uses to another.
- Originality** – It is the uncommonness or rareness of a given response. The rarity of a response is inversely proportional to its frequency. Novel responses are unusual as they are remotely associated with the stimulus. Responses given by 5% of the group are treated as original. The lesser the percentage of response, the greater the originality score.
- Elaboration** – It is a person's ability to add pertinent details or more ideas to the minimum and primary response. The minimum and primary response is that which is most essential for identifying the response.

Tools : The following tools were used on the subject.

- Information schedule
- Test of Creative Words (TCW) by Baqer Mehdi (1973) for measuring creativity.
- Test of Creative Figures (TCF) by Baqer Mehdi (1985) for measuring creativity.

Sample : 567 students comprising 135 single child, 154 first born and 278 later born children of class VII and class VIII of 12 English medium schools of Kolkata. following the curriculum of West Bengal Board of Secondary Education were assessed by the given tools.

Hypothesis :

- H₁: Single children and those with siblings will differ significantly in their total creativity scores.
- H₂ : Single children and those with siblings will differ significantly in fluency, flexibility, originality (both verbal and non-verbal), elaboration (both verbal and non-verbal).
- H₃ : Single children and first borns will differ significantly in their total creativity scores.
- H₄ : Single children and first borns will differ significantly in fluency, flexibility, originality (both verbal and non-verbal), elaboration (both verbal and non-verbal).
- H₅: Single children and later borns will differ significantly in their total creativity scores.
- H₆ : Single children and later borns will differ significantly in fluency, flexibility, originality (both verbal and non-verbal), elaboration (both verbal and non-verbal).

H₇ : First borns and later borns will differ significantly in their total creativity scores.

H₈ : First borns and later borns will differ significantly in fluency, flexibility, originality (both verbal and non-verbal), elaboration (both verbal and non-verbal).

Analysis : Descriptive analysis was done by computing the mean and standard deviation of all the subtests of creativity, total verbal, total non-verbal and total creativity for boys and girls separately. ANOVA and t-test were also performed to see if there was any significant difference in the scores of the two groups.

Result And Discussion

Table 1

Mean and Standard Deviation of the components of creativity scores of single child and those with siblings.

		N	Mean	Std. Deviation
CR-TOTAL	Single child	135	265.41	70.575
	Having siblings	432	244.69	73.378
	Total	567	249.62	73.194
Fluency	Single child	135	38.32	11.993
	Having siblings	432	36.52	13.799
	Total	567	36.95	13.403
Flexibility	Single child	135	28.14	7.171
	Having siblings	432	26.47	7.966
	Total	567	26.87	7.810
Totv_Org	Single child	135	65.43	30.320
	Having siblings	432	57.24	31.614
	Total	567	59.19	31.493
Elabo_Verbal	Single child	135	42.17	13.625
	Having siblings	432	39.73	14.374
	Total	567	40.31	14.225
Total_Verbal	Single child	135	239.49	85.896
	Having siblings	432	217.20	90.901
	Total	567	222.51	90.162
Elabo_N V	Single child	135	49.73	15.407
	Having siblings	432	45.74	13.737
	Total	567	46.69	14.278
Origi_N V	Single child	135	41.62	12.744
	Having siblings	432	38.98	12.477
	Total	567	39.61	12.530
Tot Non Verbal	Single child	135	91.36	22.239
	Having siblings	432	84.72	20.653
	Total	567	86.30	21.211

Table 2
ANOVA of the 2 groups - Single child and those with siblings

	Sum of Squares	df	Mean square	F	Sig.
CR_Total					
Between Groups	44199.519	1	44199.519	8.358	<.01
Within Groups	2988043.956	565	5288.873		
Total	3032243.474	566			
Fluency					
Between Groups	334.115	1	334.115	1.863	NS
Within Groups	101335.190	565	179.354		
Total	101669.305	566			
Flexibility					
Between Groups	285.556	1	285.556	4.712	<.05
Within Groups	34242.046	565	60.605		
Total	34527.601	566			
Total V_Orig					
Between Groups	6901.284	1	6901.284	7.033	<.01
Within Groups	554447.524	565	981.323		
Total	561348.808	566			
Elabo_V					
Between Groups	610.652	1	610.652	3.028	NS
Within Groups	113927.468	565	201.642		
Total	114538.120	566			
Total_Verb					
Between Groups	51092.502	1	51092.502	6.344	<.01
Within Groups	4549983.212	565	8053.068		
Total	4601075.714	566			
Elabo_N					
Between Groups	1639.625	1	1639.625	8.145	<.01
Within Groups	113739.363	565	201.309		
Total	115378.988	566			
Orig_N					
Between Groups	717.275	1	717.275	4.561	<.05
Within Groups	88861.585	565	157.277		
Total	89578.861	566			
Tot_Non Verb					
Between Groups	4525.829	1	4525.829	10.224	<.01
Within Groups	250117.600	565	442.686		
Total	254643.429	566			

From The above table we can see that-

- There is significant difference in the total creativity scores of only children and those with siblings.
- There is significant difference at .01 level in verbal originality, total verbal, non-verbal elaboration, total non-verbal; at .05 level in flexibility and non-verbal originality.

Figure 1

Comparison of the mean of the sub-tests of single children and those with siblings

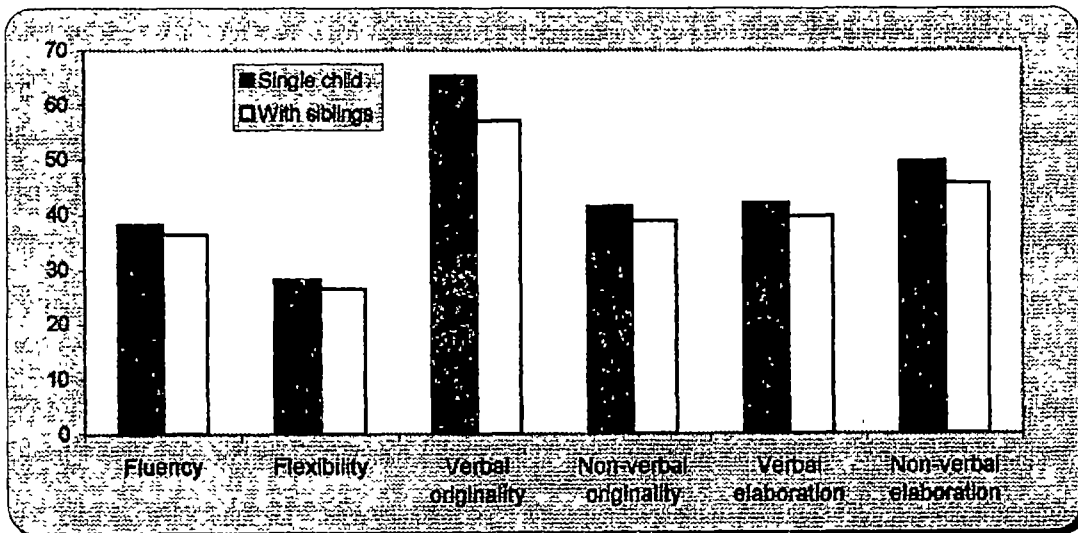


Table 3

Mean and Standard Deviation, t values of the components of creativity scores of single child and First born children

Components of creativity	Single child (N = 135)	First born (N = 154)	t	p
Fluency	38.32 (11.99)	38.60 (13.80)	.18	NS
Flexibility	28.14 (7.171)	27.84 (7.804)	.34	NS
Originality (Verbal)	65.43 (30.380)	62.77 (31.873)	1.22	NS

Elaboration (Verbal)	42.17 (13.625)	41.04 (14.818)	.67	NS
Originality (Non-Verbal)	41.62 (12.744)	39.23 (12.121)	1.63	NS
Elaboration (Non-Verbal)	49.73 (15.407)	47.80 (13.083)	1.154	NS
Total Verbal	239.49 (85.896)	233.01 (90.343)	.622	NS
Total Non-Verbal	91.36 (22.239)	87.03 (18.732)	1.793	NS
Total Creativity	265.41 (70.575)	257.28 (70.172)	.981	NS

From the above table we can see that-

- Single children and First borns do not differ significantly in their total creativity scores.
- Single children and First borns do not differ significantly in fluency, flexibility, originality (both verbal and non-verbal), elaboration (both verbal and non-verbal).

Figure 2

Comparison of the mean of the sub-tests of single child and first born ones

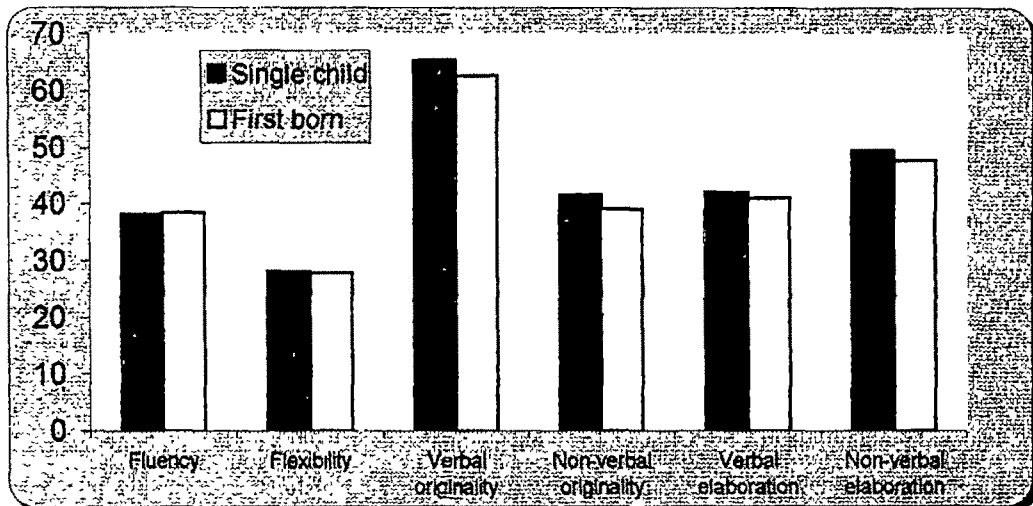


Table 4

Mean and Standard Deviation, t values of the components of creativity scores of single child and Later born children

Components of creativity	Single child (N = 135)	Later Born (N = 278)	t	p
Fluency	38.32 (11.993)	35.36 (13.688)	2.143	<.05
Flexibility	28.14 (7.171)	25.72 (7.969)	2.991	<.01
Originality (Verbal)	65.43 (30.380)	54.18 (31.106)	3.475	<.01
Elaboration (Verbal)	42.17 (13.625)	39.01 (14.097)	2.160	<.05
Originality (Non-Verbal)	41.62 (12.744)	38.84 (12.690)	2.086	<.05
Elaboration (Non-Verbal)	49.73 (15.407)	44.60 (14.056)	3.372	<.01
Total Verbal	239.49 (85.896)	208.44 (90.181)	3.333	<.01
Total Non-Verbal	91.36 (22.239)	83.44 (21.570)	3.462	<.01
Total Creativity	265.41 (70.575)	237.71 (74.303)	3.613	<.01

From the above table we can see that —

- Single children and Later borns do differ significantly in their total creativity scores.
- Single children and Later borns do differ significantly in fluency, flexibility, originality (both verbal and non-verbal), elaboration (both verbal and non-verbal).

Figure 3

Comparison of the mean of the sub-tests of single child and later born ones

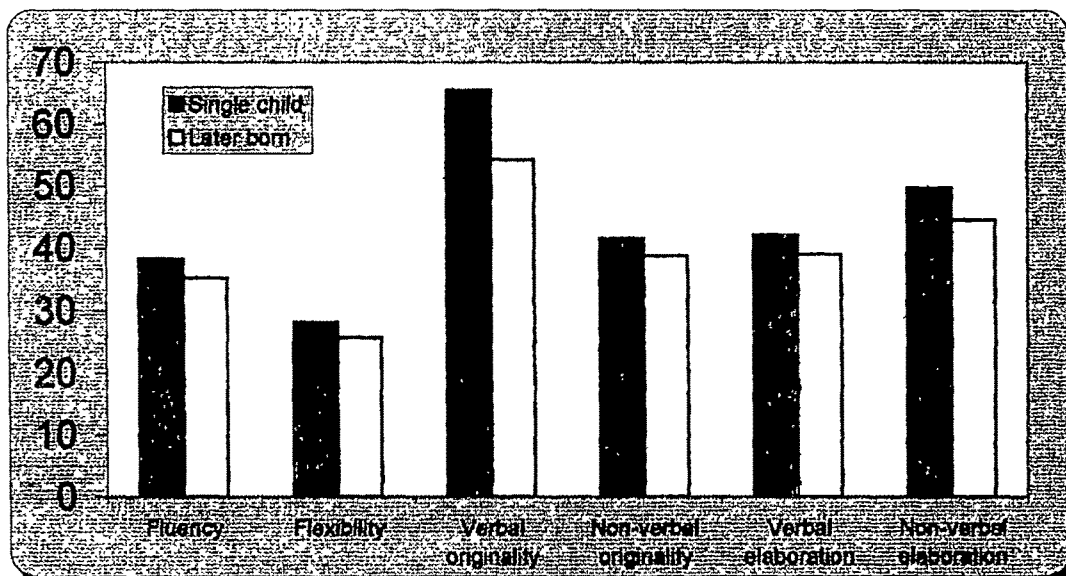


Table 5

Mean and Standard Deviation, t values of the components of creativity scores of single child and Later born children

Components of creativity	Single child (N = 135)	Later Born (N = 278)	t	p
Fluency	38.60 (13.797)	35.36 (13.688)	2.353	<.01
Flexibility	27.84 (7.804)	25.72 (7.969)	2.666	<.01
Originality (Verbal)	62.77 (31.873)	54.18 (31.106)	2.725	<.01
Elaboration (Verbal)	41.04 (14.818)	39.04 (14.097)	1.406	NS

Originality (Non-Verbal)	39.23 (12.121)	38.84 (12.690)	.312	NS
Elaboration (Non-Verbal)	47.80 (13.083)	44.60 (14.056)	2.321	< .05
Total Verbal	233.01 (90.343)	208.44 (90.181)	2.711	< .01
Total Non-Verbal	87.03 (18.732)	83.44 (21.570)	1.734	NS
Total Creativity	257.28 (70.172)	237.71 (74.303)	2.674	< .01

From the above table we can see that —

- First borns and Later borns do differ significantly in their total creativity scores.
- First borns and Later borns do differ significantly in fluency, flexibility, originality, verbal elaboration, non-verbal originality and total non-verbal scores.

Figure 4

Comparison of the mean of the sub-tests of first born and later born ones

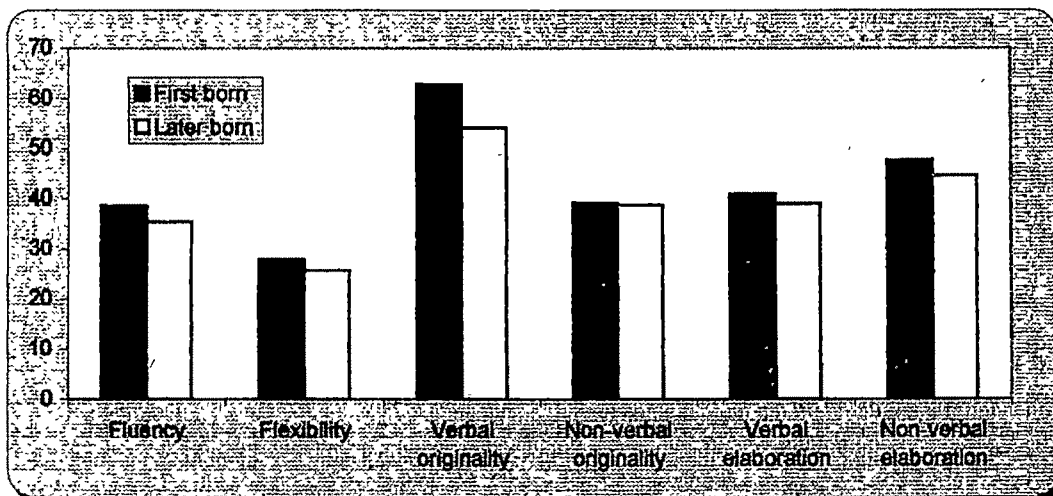
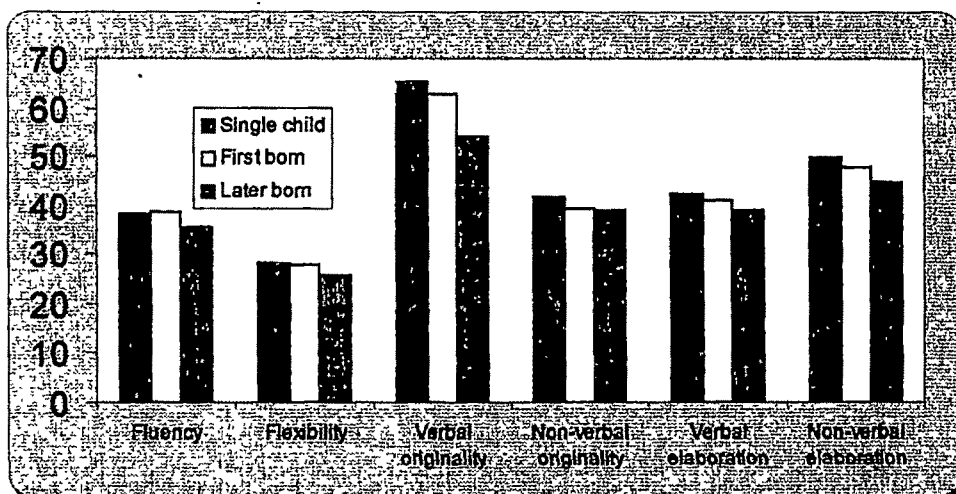


Figure 5
Comparison of the mean of the sub-tests of the three groups



Conclusions

Thus following conclusions were drawn :

- Single children and those with siblings differ significantly in their total creativity scores.
- Single children and those with siblings differ significantly in flexibility, verbal and non-verbal originality and non-verbal elaboration scores.
- Single children and those with siblings donot differ significantly in fluency and verbal elaboration.
- Single children and first born children donot differ significantly in their total creativity scores.
- Single children and first borns donot differ significantly in fluency, flexibility, originality (both verbal and non-verbal), elaboration (both verbal and non-verbal).
- Single children and later borns differ significantly in their total creativity scores
- Single children and later borns differ significantly in fluency, flexibility, originality (both verbal and non-verbal), elaboration (both verbal and non-verbal).
- First borns and later borns differ significantly in their total creativity scores.
- First borns and later borns differ significantly in fluency, flexibility, verbal originality and non-verbal elaboration.
- First borns and later borns donot differ significantly in non-verbal originality and verbal elaboration.

However, the present sample has some limitations. It has taken into account only students of a cosmopolitan city, that is, Kolkata. The students belong to schools having English as the medium of instruction. English is not the mother tongue of any of these

students. Again, they are selected from schools following only the curriculum of the West Bengal Board of Secondary Education and not ICSE or CBSE. So, more research on samples belonging to vernacular schools or those following other Boards, or those belonging to rural areas or townships need to be taken up to verify the findings.

Further, the siblings do not belong to the same family, i.e., the order of birth was according to their respective individual families. Rearing practice, sex of the other sibling in the family, family composition, age difference between the siblings too may have an influence on the scores. These were not taken into account in this study.

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Level of Anxiety and Subsequent Mental Health Status in Adolescent Students of Kolkata

Debjani Sengupta*

Jhumpa Biswas**

The beginning of the new millennium witnessed several changes in the world scenario. The all pervasive insurgence of consumerism in the backdrop of free market economy brought about a drastic change in culture, values and belief system of the urbanities in India and to be more specific, in the aspiration level of the middle class society in large metropolitan cities. Essentially, it implies competition for better product, consciousness for quality and a basic awarness at all levels for better living and vertical mobility. The inevitable consequence of all these is the high demand for the best of human resources and only for the best.

'Being the best', is the matter of compulsion rather than a choice now-a-days which often leads the child to the breaking point. From the very tender age the concept of competition is engraved in the child before they enter school. If an individual is able to meet all the demands of life and accepts all the challenges that come in the way then success is inevitable to come. But those who cannot accept the pressure of competition that life demands are adversely affected. According to the research reports over the last few decades, people seem to have become more anxious worrying about safety, social expectation and job security than in the past. The perceived trend is so strong that some authors have labeled the 20th centurs "the age of anxiety". The theories on the origin of anxiety provide information about the societal changes over time. These models include overall threat (anxiety increase as environmental threat increases), economic conditions (anxiety increases as economic condition deteriorates) and social connectedness (anxiety increases as social bond weakens).

There are some other psycho-social factors which may have some impact on the mental health status of the children. Some of these are inclusion of more and more women into the work force, increasing number of nuclear families, single child and latchkey children. This is the backdrop in which the present study has been originated.

Objective :

The objective of the study is to assess the mental health status and the extent of anxiety in adolescent children with reference to their sibling status, grade and gender.

Hypotheses :

Hypotheses on Test Anxiety :

No significant difference exists between the mean scores of childeren in measures of Test

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Anxiety with reference to grade (std. nine to twelve), gender (boys/girls), sibling status (single child/multiple child).

Hypotheses on General Anxiety :

No significant difference exists between the mean scores of children in measures of General Anxiety with reference to grade (std. nine to twelve), gender (boys/girls), sibling status (single child/multiple child).

Hypotheses on Mental Health :

No significant difference exists between the mean scores of children in measures of Mental Health with reference to grade (std. nine to twelve), gender (boys/girls), sibling status (single child/multiple child).

Sample :

Multi-stage stratified random sampling technique was used to select subjects for the study. The stratifying variables were sibling status gender and grade of children. The tests were initially administered to 600 children in grade level (IX-XII) consisting of boys and girls. The number finally reduced to 480 after taking account of mortality and other confounding variables.

Materials :

- 1) A personal data sheet (PDS) developed by the investigators to collect data about gender, age, grade and school of the subject and the educational qualification, occupation, income of the parents.
- 2) Sarason's Test Anxiety Scale for children (T.A.S.) adopted by Nijhwan.
- 3) Sarason's General Anxiety Scale for children (G.A.S.) adopted by Nijhwan.

Analysis :

The data were subjected to two-way ANOVA.

Result and Discussion :

The results of ANOVA are presented briefly in the tables 1-4 given below :

Table 1. Main Effect : Test Anxiety

Source	Sum of SQS	DF	Mean SQ	F	Tailprob	Comment
C : Class	8452.35639	3	2817.45213	10.57	0.00	HS
S : Sex	4602.82930	1	4602.82930	17.27	0.00	HS
n : no. of sib.	51.11062	1	51.11062	0.19	0.66	NS
Error	119434.84209	474				

Table 2. Main Effect : General Anxiety

Source	Sum of SQS	DF	Mean SQ	F	Tailprob	Comment
C : Class	5.00952	3	1.66984	2.40	0.07	HS
S : Sex	3.24195	1	3.24195	4.66	0.03	HS
n : no. of sib.	1.80690	1	1.80690	2.60	0.11	S
Error	311.59030	442				

Table 3. Main Effect : Mental Health

Source	Sum of SQS	DF	Mean SQ	F	Tailprob	Comment
C : Class	2.76628	3	0.92209	0.86	0.46	HS
S : Sex	9.3333	1	9.33333	8.70	0.00	HS
n : no. of sib.	0.01457	1	0.01457	0.01	0.91	NS
Error	480.67733	474				

Table 2. Interaction Effect : Two Marginals

Source	F – Value for		
	TA	GA	MH
CS	6.63 (H.S.)	10.70 (H.S.)	9.66 (H.S.)
Cn	1.51 (S)	0.18 (S)	0.60 (N.S.)
ns.	0.36 (S)	0.60 (N.S.)	0.17 (S)

The findings suggest that mean scores of 9th, 10th, 11th and 12th graders in Test Anxiety (T.A.) and General Anxiety (G.A.) scales exceed the norm suggesting the trend of high anxiety level in school children of Kolkata Metropolis. The mental Health score shows that for all the grades they are just on the edge of normal level. It also suggest that

1. Highly significant difference exists between the mean scores of students in different grades in TA and GA scales. Significant difference is also observed between the mean scores of students in different grades in mental health scale.

2. Highly significant difference is observed in mean scores of boys and girls in TA and GA and MH scales.
3. Sibling status of the students has been found to have no impact on the mean scores in GA, TA and MH Scales.
4. The effect of gender on T.A., G.A. and M.H. score is significantly (high) different at different grades.
5. The effect of sibling status is significantly different at different grades on T.A. and G.A. mean scores.
6. The effect of sibling status is significantly different for the boys and girls on T.A. and M.H. mean scores.
7. The effect of Sibling status for the boys and girls is significantly different at different grades on T.A., G.A. and M.H.

The findings indicate a significant trend of adolescent learners' mental health status. Previously some psychologists and educationists believed that a little extent of anxiety is beneficial for further growth. But it is difficult to reconcile from the viewpoint of positive mental health. Psycho dynamists assert that high parental expectation and negative parental judgement can produce feelings of dependency, guilt, aggression which can play a prominent role in pupils' life. Literature regarding development of test anxiety among elementary and secondary school students indicate that anxiety as a multidimensional construct having its roots in parental reaction to children's achievement strivings. The ontology was related to children's developing capacity 1) to interpret their own school performance against their previous performance, and 2) to evaluate the performance with other children with the strict evaluative practice which children encountered while moving through schools. The pressure to excel and be the best often creates an unbearable stress in the young mind.

Qualitative Impact Assessment of District Primary Education Programme (DPEP) Intermis of In-Service Teachers' Training*

Mrinal Mukherjee**

Introduction

Being an essential input to the quality of life of an individual, Education is a fundamental human resource development activity. The goal of "Education for all" has become a cherished dream of every nations.

One of the directive principles of the state policy of the Constitution of India is that the state shall endeavor to provide, within period of ten years from the commencement of this constitution for free and compulsory education of all the children until the age of fourteen years.

High drop-out rate ranging upto 60%, large number of out-of-school children (about one-third), lack of access in 17% (1.8 lakh) of habitations within one km radius and high wastage (33%) taking 7.2 years for 5 years of primary schooling were some areas of concern.

Identification of Research Problem

Primary education, being the basal component of the pyramidal structure of education, is the most sensitive and concerned with the national development and thereby demands maximum weightage. Thus "Teachers' Training" for the primary education level should enjoy maximum focus.

The Gross Enrolment Ratio (GER) at the primary stage in India has exceeded 100 per cent. Despite all such achievements, a large number of children are still out of school and the goal of UEE continued to be elusive. However, more than 25 million school-age children are not in school. Two out of five first-grade students do not complete the primary cycles of 4-5 years.

In-service and in-service components are inseparable. The initiatives taken in setting District-Institute of Education and Training [DIET] is a major development in this regard.

The Programme of Action (POA) 1992 provided fresh insights and directions for achieving Universalisation of Elementary Education. It called for an integrated and decentralized approach to the development of primary education with focus on building capacities, particularly at district and sub-district levels. Imbibing the spirit of this policy initiative, emerged DPEP in 1994.

* The author gratefully acknowledges the help and guidance of his teacher Dr. Debasri Banerjee in preparing this paper.

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The DPEP programme takes a holistic approach of primary education. Development seeks to operationalise this strategy through district specific planning with emphasis on decentralized management. This programme emphasizes for universalisation of primary education, reducing dropout rates to less than 10% increasing learning achievement of primary student by 25% and also reducing the gender and social gap to less than 5% as immediate target.

Multiple effort has been taken to achieve the immediate aims and objectives. The target oriented time-bound programmes have been taken for simultaneous development of infrastructure and teaching-learning system. Major thrust area of this project was to provide in service training to all working teachers of primary level irrespective of their pre-service training status.

From the commencement of the project, there was a provision of in-service training schedule for all teachers in general and for subject wise groups. Apart from training workshop, a Circle Learning Resource Center (CLRC) has been established at each circle under the administrative leadership of Sub-Inspector of school. Each of the CLRC is supported by Resource Teacher (RT) for regular training, monitoring and counselling of teacher in institution level.

The in-service teacher's training programme of DPEP includes new technique of teaching and methodology for assessment. This study intended to examine the changes that have taken place in the quality of teaching and on the learning process of students.

Objectives of the Research Study

- 1) To investigate the change in the profile of teachers regarding teacher's training.
- 2) to investigate how far new techniques and strategies are executed in the class room situation.
- 3) To investigate the impact of training of teachers on learning of students.
- 4) To assess how far the participatory learning and action training programme have been able to engage the parents and local inhabitants with the entire process of the primary education.
- 5) To investigate the input of new technique on enrolment and retention.

Methodology

To study this issue, two areas of different nature have been selected. These two areas are Municipal area including the area of Budge Budge and Pujali municipality and Budge Budge gram-II which has been selected purposively. To choose the primary school, I have followed sample survey techniques to select 12 schools in total. Among these six were from urban and six from rural area.

To study the responses of the teachers, I have selected 50 teachers in random manner. To conduct the study, I have followed direct investigation through questionnaire method.

Results and Discussion

The results of the survey are presented in the tables from 01-08 from page 52 to 57.

Table – 01 Change of Students Strength

Sl No.	Name of the School	Location	No. of Students Before DPEP			No. of Students After DPEP		
			Boys	Girls	Total	Boys	Girls	Total
1.	Senpukur F.P. School	Rural	129	120	250	135	111	246
2.	Nayachak F.P. School	Rural	86	69	155	82	86	168
3.	Goborihury F.P. School	Rural	199	236	437	195	225	420
4.	Khariberia F.P. School	Rural	113	124	237	97	112	209
5.	Mayapur Junior Basic F.P. School	Rural	143	140	283	129	132	261
6.	Avirampur F.P. School	Rural	101	103	204	89	119	206
7.	Banjonheria G.S. F.P. School	Urban	114	119	233	75	92	167
8.	Abbey primaryboy School	Urban	207	Nil	207	277	Nil	277
9.	Okpary U.P.P Moktab F.P. School	Urban	111	114	225	98	91	189
10.	Kalipur Uttar F.P. School	Urban	137	134	271	165	147	312
11.	Paschim Pujali F.P. School	Urban	89	123	212	118	98	216
12.	Kalipur Priti Sangha F.P. School	Urban	156	97	213	107	110	217

Table – 02 Change of Enrolment Pattern

Sl No.	Name of the School	Change of Enrollment %
1.	Senpukur F.P. School	-1.60
2.	Nayachak F.P. School	+7.7
3.	Goborihury F.P. School	-3.8
4.	Khariberia F.P. School	-11.8
5.	Mayapur Junior Basic F.P. School	-7.77
6.	Avirampur F.P. School	+0.98

7.	Banjonheria G.S. F.P. School	-28.33
8.	Abbey primaryboy School	+33.82
9.	Okpary U.PP Moktab F.P. School	-16.00
10.	Kalipur Uttar F.P. School	+15.13
11.	Paschim Pujali F.P. School	+1.89
12.	Kalipur Priti Sangha F.P. School	+1.88

**GRAPHICAL REPRESENTATION OF CHANGE OF
ENROLMENT AFTER IMPLIMENTATION OF DPEP**

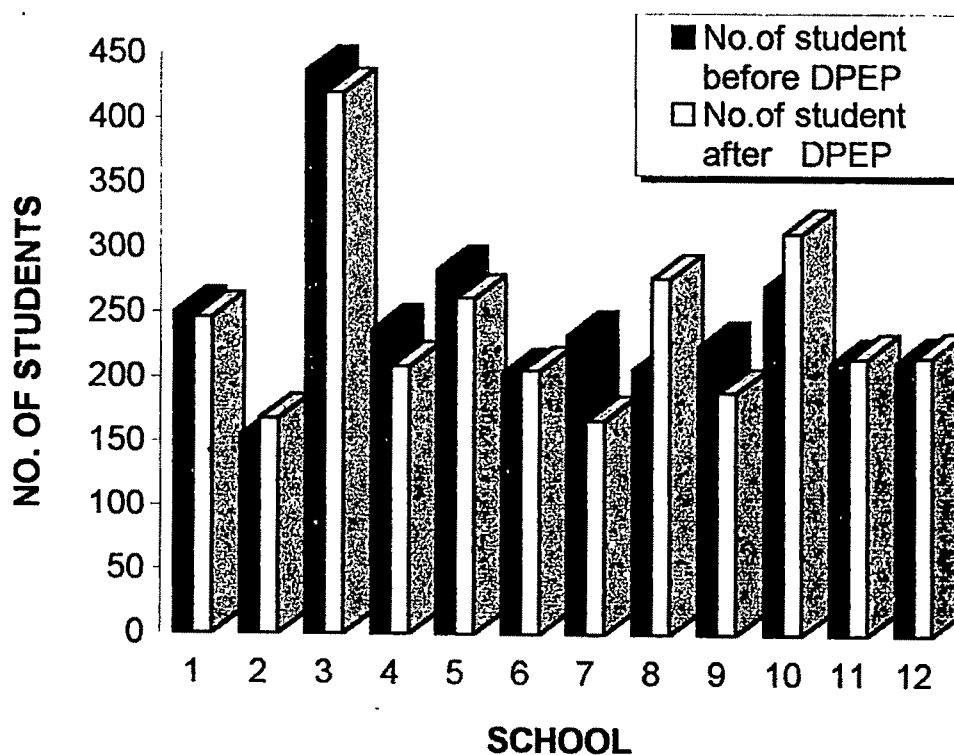


Table – 03 Teacher Profile in Terms of I.B.T.

Sl No.	Name of the School	Before DPEP			After DPEP		
		No. of Teachers	Trained	Untrained	No. of Teachers	Trained	Untrained
1.	Senpukur F.P. School	03	02	01	03	02	01
2.	Nayachak F.P. School	02	01	01	03	02	01
3.	Goborihury F.P. School	02	01	01	05	02	03
4.	Khariberia F.P. School	04	02	02	04	02	02
5.	Mayapur Junior Basic F.P. School	03	02	01	03	01	02
6.	Avirampur F.P. School	04	02	02	03	02	01
7.	Banjonheria G.S. F.P. School	04	01	03	04	01	03
8.	Abbey primaryboy School	04	04	00	02	02	00
9.	Okpary U.P.P Moktab F.P. School	01	01	00	04	03	01
10.	Kalipur Uttar F.P. School	02	01	01	05	03	02
11.	Paschim Pujali F.P. School	02	01	01	03	02	01
12.	Kalipur Priti Sangha F.P. School	03	01	02	03	00	03

COMPARATIVE REPRESENTATION OF TEACHER STRENGTH BEFORE AND AFTER DPEP

■ NO. OF TEACHER BEFORE DPEP □ NO. OF TEACHER AFTER DPEP

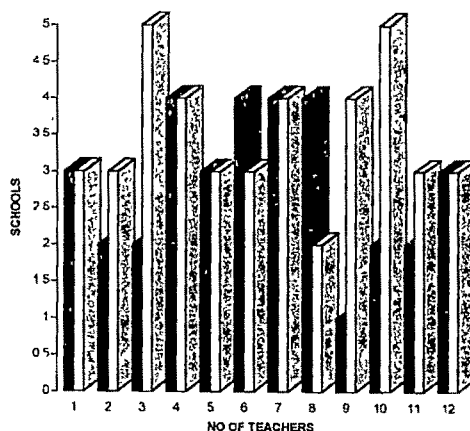


Table – 05 Student – Teacher Ratio

Sl No.	Name of the School	Before DPEP			After DPEP		
		No. of Students	No. of Teachers	Student Teachers Ratio	No. of Students	No. of Teachers	Student Teachers Ratio
1.	Senpukur F.P. School	250	03	83:1	246	03	82:1
2.	Nayachak F.P. School	155	02	78:1	168	03	56:1
3.	Goborihury F.P. School	437	02	219:1	420	05	84:1
4.	Khariberia F.P. School	237	04	59:1	209	04	52:1
5.	Mayapur Junior Basic F.P. School	283	03	94:1	261	03	87:1
6.	Avirampur F.P. School	204	04	51:1	206	03	69:1
7.	Banjonheria G.S. F.P. School	233	04	58:1	167	04	42:1
8.	Abbey primaryboy School	207	04	52:1	277	02	139:1
9.	Okpary U.PP Moktab F.P. School	225	01	225:1	189	04	47:1
10.	Kalipur Uttar F.P. School	271	02	136:1	312	05	62:1
11.	Paschim Pujali F.P. School	212	02	106:1	216	03	72:1
12.	Kalipur Priti Sangha F.P. School	213	03	71:1	217	03	72:1

COMPARATIVE REPRESENTATION OF NO. OF STUDENTS PER TEACHER BEFORE AND AFTER DPEP

■ NO. OF STUDENTS PER TEACHER BEFORE DPEP
 □ NO. OF STUDENTS PER TEACHER AFTER DPEP

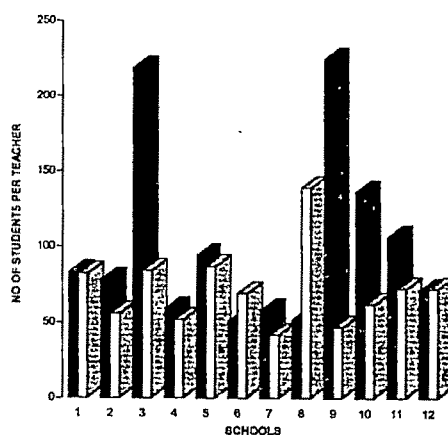


Table – 06 Change of Teachers Strength After DPEP

Sl No.	Name of the School	Before DPEP			After DPEP		
		No. of Teachers	Trained	Untrained	No. of Teachers	Trained	Untrained
1.	Senpukur F.P. School	03	02	01	03	02	01
2.	Nayachak F.P. School	02	01	01	03	02	01
3.	Goborihury F.P. School	02	01	01	05	02	03
4.	Khariberia F.P. School	04	02	02	04	02	02
5.	Mayapur Junior Basic F.P. School	03	02	01	03	01	02
6.	Avirampur F.P. School	04	02	02	03	02	01
7.	Banjonheria G.S. F.P. School	04	01	03	04	01	03
8.	Abbey primaryboy School	04	04	00	02	02	00
9.	Okpary U.PP Moktab F.P. School	01	01	00	04	03	01
10.	Kalipur Uttar F.P. School	02	01	01	05	03	02
11.	Paschim Pujali F.P. School	02	01	01	03	02	01
12.	Kalipur Priti Sangha F.P. School	03	01	02	03	00	03

Table – 07 Group wise Teaching, Home Task and T.L.M. use Pattern

Sl No.	Name of the School	Group Wise Teaching		HOUSE TASK		USE OF T.L.M.	
		Before DPEP	After DPEP	Before DPEP	After DPEP	Before DPEP	After DPEP
1.	Senpukur F.P. School	×	√	√	√	×	√
2.	Nayachak F.P. School	×	√	√	√	√	√
3.	Goborihury F.P. School	×	√	×	√	×	√
4.	Khariberia F.P. School	×	√	×	√	×	√

5.	Mayapur Junior Basic F.P. School	×	√	×	√	×	√
6.	Avirampur F.P. School	×	√	√	√	×	√
7.	Banjonheria G.S. F.P. School	×	√	√	√	×	√
8.	Abbey Primaryboy School	×	√	√	√	√	√
9.	Okpary U.PP Moktab F.P. School	×	√	√	√	×	√
10.	Kalipur Uttar F.P. School	×	√	√	√	√	√
11.	Paschim Pujali F.P. School	×	√	×	√	×	√
12.	Kalipur Priti Sangha F.P. School	×	√	√	√	×	√

Table – 08 Individual Response of the Teachers on Questionnaire of Survey Schedule

SI No.	Favourable Response	Negative Response
1.	40	10
2.	20	30
3.	35	15
4.	40	10
5.	30	20

Discussion

One of the important objectives of District Primary Education Programme is to develop the quality of teaching in primary schools. Some educationists have mentioned earlier that due to poor quality of teaching the children are not attracted to come to school even some of the existing students are not continuing their education or they are shifting from government school to private school. To solve this problem DPEP programme has introduced some new methods of teaching in primary schools. These new methods could be of three categories: groupwise teaching, which means the students teach themselves by the formation of group. The group leaders (as nominated by teacher) are instructed by the teacher and he/she teaches others (Peer tutoring system).

Home task, which is not a new concept. This method exists since the beginning of formal education. Use of charts and models, is the very scientific method because the

students can learn the lesson visually. For this purpose the grant for teachers learning materials (TLM) is utilised.

This study has tried to investigate whether these methods are actually implemented and if yes what is the impact of these teaching strategies on enrolment and retention pattern.

The tables and graphs depict the real situation of primary education in Budge Budge circle of South 24 Parganas. Though there is a little bit of chance of influence of some other intervening factors till the impact of in-service Teachers Training of DPEP can be observed directly. It is clear from the pattern of change in enrolment that out of 12 schools, there is a positive increase in enrolment in 6 schools only. Out of 6 schools where enrolment has increased 4 schools belong to urban municipal area while rest 2 schools belong to rural area. The other 6 schools show a fall in enrolment. Though the Teacher strength of those schools where enrolment has increased were same before and after DPEP, due to the increase of student strength, the teacher ratio changed a little. It has been observed that there was no instance of group wise teaching at any school in this area before DPEP. But after the consecutive teachers orientation and training programme in every year from 1997 as a part DPEP programme all the primary institutions employed the strategy of group wise teaching regularly. There was a tradition of giving home assignment in those schools only where there was increase of enrolment. After DPEP all the schools were using "Home assignment" strategy. So far, the use of Teaching Learning Material (T.L.M.) is concerned only 3 schools had a tradition of using elementary Teaching Aids like Charts and Globe before the implementation of DPEP and all 3 schools show an increase in the rate of enrolment. After DPEP, all the schools were regularly using T.L.M.

It is essential to mention here that there were 64 primary schools in Budge Budge Circle before the launch of DPEP project which increased to 69 after the execution of the project. Due to enrolment drives there was a marginal increase in enrolment as a whole. The total student strength of Budge Budge circle is at present as follows:

Year 2001 – 2002 — Total students 13010, boys 6595 and girls 6415.

Year 2002 – 2003 — Total students 13052, boys 6631 and girls 6421.

The study also reveals that instead of increase of gross enrolment of students there was a reduction of enrolment in few schools. There was 4 schools in rural area where there was a fall in enrolment. It may be due to establishment of Sishu Siksha Kendra (SSK) and Sarba Siksha Abhijan (SSA) center in these areas. There are 27 SSK and 93 SSA centers at present in Budge Budge Circle and 60% of SSK and SSA centers are located in rural area. The fall of enrolment in 4 schools of rural area may be due to intake of a considerable number of students in these centers. But as a whole there is a rate of increase in enrolment of students in Budge Budge Circle, if the SSK and SSA centers are included.

The opinion survey of teachers reveal that the majority of teachers have accepted the relevance of the in service training programme in DPEP. They accepted the appropriateness of the teaching Learning material. They also agreed that ready made T.L.M. and raw

materials of T.L.M. are supplied in regular manner by the authority. They considered Participatory Learning Action (PLA) training programme as instrumental in involving local community in primary education. Though contrastingly 50% of the teachers opined that due to several crude reality of infrastructural crisis the new strategies cannot be implemented in proper.

Conclusion

The effectiveness of In-service Training Programmes of DPEP should be assessed in terms of its achievements. The training programme has brought fruitful results in maintaining the knowledge and skill of teachers and it also helps teachers to enlarge and improve their educational capabilities in all fields of their work which has been manifested in steady enrolment and retention of students and every day practice of teaching. This training has also helped the teachers to develop the special talents and to raise their cultural and professional standard.

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**Published by
Department of Education
Calcutta University**

**Printed in India by Pradip Kumar Ghosh,
at the Calcutta University Press,
48, Hazra Road, Kolkata - 700 019**

Price : Rs. 50.00